World Bank Global Facility for Disaster Reduction and Recovery Track II: Malawi

# Situation Analysis of Disaster Risk Management Programmes and Practices

**Final Report** 

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Volume 1 of 2 Text

Prepared by

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# Disclaimer

The opinions expressed in this document are those of the authors and do not necessarily represent the views of the parties with whom we have interacted and nor do they represent the views of either the World Bank or the DoDMA of the Government of Malawi.

# Situation Analysis of Disaster Risk Management Programmes and Practices in Malawi

# **Executive Summary**

The Disaster Overview and Situation Analysis of Disaster Risk Management in Malawi was undertaken between February and August 2008 for the Department of Disaster Management Affairs (DoDMA) of the Government of Malawi (GoM), with financial support from the World Bank (WB). The purpose of this study is to recommend on the formulation of the National Disaster Risk Management Policy and Strategies, based on an assessment of disaster risk management policies and practices in Malawi and the activities of various stakeholders.

A comprehensive background and disaster-specific literature review and inspection of national and international disaster databases were undertaken. Information and data was obtained during interviews with representatives of different stakeholders in the GoM, the Donor and UN community, international and national Non-Governmental and Faith Based Organisations, as guided by the DoDMA, GoM.

### Disaster Overview – Definition, Categories, Impacts and Occurrence

The summary of disasters (per UN/ISDR Hazard category) in Malawi since 1946, and analysis of pattern, trends and impact on the population, is based on the National Disaster Profile (NDP) compiled by the DoDMA and is detailed in Volume 1, Section 2 of the report. The NDP does not include cost estimates of the impact of individual disasters, but records the numbers of the population impacted. The NDP is not structured as a formal database.

### Definition and Category of Disaster

There is no formal definition of a disaster in Malawi. The trigger criteria are the levels of Malnutrition/Need for Food Aid and the numbers of displaced or affected persons, but no thresholds measures are formally recognized. Selected international databases (CRED and GLIDE), use a specific definition of disaster based in part on quantitative criteria and supplement the information in the NDP primarily with respect to cost estimates of impact on population and infrastructure. Aside from differences in the structure of the databases and the categorization of disasters, there are discrepancies in the data itself, but these do not impact on the trend analysis or recommendations.

The NDP was analysed without the inclusion of vehicle accidents (which result in high fatalities and appear to be increasing in recent years) to establish trends arising from natural hazards (floods, droughts, earthquakes and landslides), human-induced disasters (environmental degradation) and biological (epidemics, agricultural pests).

#### Impact and Occurrence

The southern region and lakeshore districts are most vulnerable to flooding while droughts occur throughout Malawi. Food Shortage and Famine is the most frequent and widely reported disaster arising from floods and droughts, but floods displace more people and result in greater damage to fixed assets than droughts. The connection between environmental degradation and flood patterns in the Lower Shire is recognized and warrants further investigation in the context of Rift Valley tectonics. The risk of earthquake or landslides in an active rift valley is underestimated because the cumulative impact and relative frequency of floods and droughts are unduly weighted against the probability of a high-magnitude earthquake, i.e., infrequent, very-high-impact hazards are underestimated in a qualitative Risk Assessment process, based on memory rather than scientific evidence.

The statistics recorded since 1987 indicate that epidemics are responsible for more deaths than floods and drought combined. Epidemics would therefore rank as a higher priority risk in terms of the current UN/ISDR definition of a disaster than Floods or Droughts, singly or combined. The most deadly epidemic disasters (other than that recorded for 1989) fall immediately before, during and after the prolonged period of drought and flood (2001 – 2005) and resulted in extensive famine and food shortage throughout Malawi during the most critical years (2001/2002 and 2004/2005). A more detailed analysis is required to investigate secondary and tertiary impacts arising out of disasters that are ascribed to Floods and Droughts. If deaths are not en masse or do not happen over a short period of time, the cumulative total is easily overlooked and incidents remain in the domain of the relevant line ministry.

The data in both the NDP and the CRED database suggest that Food Shortage and Displacement are the primary issues to address in mitigating and responding to the impact of floods and droughts. During times of intense and/or extensive food shortages and/or displacement of people, very particular EM/DRR measures to reduce the deaths arising from secondary and tertiary impacts are possibly not receiving attention. Food Security is the most critical factor in household and community vulnerability and depends on health, crop production and the income/asset base available to tide a household over periods of shortage.

There is no hard data available, with which to examine the socio-psychological impacts of a disaster in Malawi. The generic data that does exist relates to verbal reports of deaths from violence, gender specific crimes (rape, sexual assault or abuse), and abuse of the elderly, women or children. It is understood that incidents are reported to the police but the data is not assessed in the context of disaster impact. Devereaux (2001, 2002) reported that social bonds in communities were being stressed beyond coping capacity during the famine of 2001/2002. It is recommended that such data be collated as a matter of routine as part of the DM approach. This would aid the process of mitigation and identify the necessary support measures required.

No information on the volumes or cost of relief items supplied by both the GoM and its partners is in a readily accessible and usable format. Such raw data may in some instances be available from different Line Ministries in the GoM and from individual Relief and Aid agents. However, Benson and Mangani (2008) report difficulties in acquiring the data in readily usable format. Similarly, data with respect to current expenditure in Disaster Risk Reduction-related interventions is also not available in a format that could assist in isolating costs that relate to a particular event. Most stakeholders, particularly NGOs, are unwilling to disclose this other than to their donors. The impact of disasters pre 2003 and post 2003 and the state of the environment information for Malawi suggests that Hazards themselves are increasing in scale or frequency but that the Vulnerability of the Population & Environment is increasing and the Coping Capacity is decreasing. Socio-economic data available in the literature supports this interpretation. Specific and sharp declines in the GDP of Malawi over the past 20 years follow and coincide with significant disasters, particularly droght, being recorded (Benson and Mangani, 2008).

### **Disaster Risk Management – Policies, Programmes and Practice**

A historical perspective on DRM illustrates the paradigm shifts that have occurred since 1989. Perspective and insight in current processes at international level can support the strategic planning and coordination of existing activities as well as motivation for funds and selection of partners. Prior to the World Conference on Disaster Reduction (WCDR, January 2005, Japan) there had been limited emphasis on Disaster Risk Reduction (DRR) but significant global effort and investment on Disaster Management (DM). Emphasis shifted post WCDR 2005 from DM to DRR as outlined in the Hyogo Framework for Action (HFA) and more recently, the Adaptation to Climate Change initiative (NAPA). These are supported by the international agreements and activities pertaining to the Millennium Development Goals (MDGs).

Details of the programmes and projects within the existing national and international policy landscape of Malawi are summarized in Section 3 and tabled in Annexure A of the report. The information forms a backdrop to the Situation Analysis of current Disaster Risk Reduction (DRM) practice in Malawi. The description and analysis of current activities in DRM is based on data and information obtained from literature and numerous parties interviewed in the course of the study. This information is summarized in Volume 1 (Section 3) and in Volume 2 (Annexure A and Appendix E) of the report.

The overarching Strategic Goals of the Hyogo Framework for Action (HFA) are accepted as a summary of the long-term purpose of all Disaster Risk Management (DRM) activities in Malawi. There are three key strategic goals to work towards in the course of implementing the HFA. The HFA template defines five key areas for Priority Action; each Area comprising particular activities necessary to undertake in order to meet the key Strategic goals. The HFA Priority areas of Action are used as a basic analytical tool and checklist against which to evaluate the planning and coordination of such activities.

The rationales for adopting the strategic goals of the HFA are:

- Malawi is a signatory to the HFA, as are most countries, world wide;
- The Ministers of the Environment in the AU have approved the African Plan of Action for DRM in Africa and this informs programmes and funding of DRM in the region
- International best practice is based on the HFA template;

- Activities and funding by donors, international agencies and NGOs are driven by the HFA and related global agreements (e.g. Human Rights Legislation, the MDGs, UN Framework and Convention for Climate Change (FCCC). Most of the global agreements are integrated in existing Strategy, Policy and Framework for action documents of different Line ministries in GoM and have been prepared by the GoM in response to these international processes (e.g. Malawi Growth and Development Strategy (2006) inter alia). The environmental policies of Malawi follow these trends most particularly.
- The challenge is to ensure that DRM is mainstreamed in the programmes of different Line Ministries. The HFA is designed to support such a multi-hazard, multi-sectoral approach;
- There are many forums in which key stakeholders from all sectors and institutions already meet and that function as an informal National Platform especially in the area of Food Security. The NDPRC is in effect a platform for DM;

Current DRM activities in Malawi in each HFA Priority Area of Action are described, followed by a summary situation analysis using a bulleted list of the priority constraints. Recommendations for progress are based on strengths and opportunities observed in the system. Figure 3-4 in Section 3.3 of the report illustrates how different HFA areas can support strategic development of a multi-hazard, multi-sectoral programme. Cross cutting issues of the HFA are included in the discussion where appropriate but not addressed separately.

### <u>HFA 1</u>

HFA 1 activities are designed to make DRR a national and local priority and to ensure that there is an enabling legal and institutional environment to support implementation and collaboration between government departments, international agencies and civil society. There has been progress since 1991 when the Disaster Preparedness and Relief Act came into effect, and as a result made provisions for the coordination and implementation of measures to alleviate effects of disasters. The process of preparing a National Disaster Management Plan for Malawi (NDMPM) was initiated in 1995 and the draft version will be used to support the development of the Disaster Risk Management Policy and the Disaster Operations Guidelines and the launch of a National Platform for DRM.

These policies and guidelines will interface with the overarching MDG strategy known as the Malawi Growth and Development Strategy (2006). Various strategies, policies, Frameworks for Action specific to different Line Ministries, support the achievement of the MDGs in Malawi viz. the Malawi National Adaptation Programmes of Action (NAPA) (2006), the Social Protection Policy and various regional programmes and international human rights and environmental conventions signed by Malawi. All inform and impact on DRR activities. The indicators used to monitor progress in realizing the MGDs could be used as a basis for discussing a more systematic, methodical approach to co-ordinate, monitor, evaluate and assess outcomes of DRM activities by different agencies.

The current legal, policy and institutional landscape of Malawi supports the integration of DRR into the routine Line Function of different Ministries (see Table Volume 2, Table A.3.1 & A.3.4). Consideration of the cross cutting HFA element of Gender Perspective and Cultural diversity in addressing the sub themes of Food Security, Social Protection, Disaster Management, Education, Gender and Good Governance as documented in the MGDS suggests that there is appreciation of all these issues except that of Gender, a key aspect of the international MDGs.

The issue of Gender (as pertaining to both men and women), Environmental Degradation and Land Tenure and Land Use issues are related and impact on food security, a key element in vulnerability to disaster in Malawi. Given that the issue of food security involves the availability of food as well as the availability of disposable cash or other assets, these gender vulnerabilities are critical to reducing Vulnerability and Increasing Coping Capacity at village and community level. In the context of DRR, consideration of how gender based differences impact on successful DRR efforts and preparedness is warranted.

The key constraints to overcome and the strengths on which to build in realizing the goals of the HFA 1 are summarized below.

### **Constraints**

• The DoDMA is seriously understaffed and under-resourced in terms of finance, capacity, skills, equipment and ICT. District-level Desk Officers from the MoLG&RD are responsible for DM although they have no training in this field.

• Benson & Mangani (2008) have detailed and summarized the financial challenges and constraints with respect to the budgetary arrangements and allocations for DRM in Malawi as well as the need for improved financial management.

### Strengths & Opportunities

- The DoDMA has a relatively high profile in government and could play a significant advocacy and education role in mainstreaming DRR measures into the functions of different Line Ministries depending upon the profile and prestige of the unit.
- There are a number of sub-regional and national initiatives that address Drought and Flood Management; Food Security, Communicable Diseases, Nutrition, Gender (see Annexure A\_3) inter alia that are already underway, spearheaded by the Line Ministries, MolWD, MoAF&S; MOH; MoLGRD amongst others.
- The UN, Donor and NGO sector and GoM Line Ministries have demonstrated willingness to support and cooperate in all previous disaster events. Lessons learned (e.g. 1990/1991; 2001/2005) have been acted upon and formalized in various cooperative Fora (e.g.JEFAP, MVAC, FEWSNET). These agencies are largely involved in the development of (and are therefore knowledgeable about) the Strategy/Policy Landscape and issues that inform the activities of the DoDMA.
- Malawi is listed as one of the 14 African countries in the Global Facility for Disaster Risk Reduction (GFDRR) Track II to receive funding for the Fiscal years 2008–2010 in South-South cooperation; The AfDB and major donors have also prioritized DRR.

### <u>HFA 2+5</u>

Community Preparedness and timeliness of Emergency Response (HFA 5) depends primarily on the national and local level Hazard Identification, Risk Assessment/Perception, Monitoring of Risks at national and local level and effective communication of Early Warning (HFA 2). This is especially true for Rapid Onset Disasters (e.g. Flooding and Landslides).

<u>HFA 2</u> activities primarily pertain to the planning, design, management and implementation of an effective Early Warning System and includes

1) Hazard Identification, Risk Assessment and selection of indicators for 2) monitoring and input to the Early Warning process including 3) appropriate dissemination of the warning depending upon the recipient(s). The National Disaster Management Plan (2004) details the numerous hazards that Malawi faces but stops short of formal Risk Assessment, Participatory Risk Appraisal at local level and does not formalize local level early warning or disaster impact and loss assessment processes. The status of Early Warning in Malawi is summarized in Volume 2, Table A.3.5 of the report.

#### Hazard Identification and Risk Assessment

The equation  $R = H \times V /C$  ensures that the meaning of the term Disaster i.e. the unacceptable impact on man of a natural or man-made event, is not conflated with the term Hazard and Hazard is not conflated with Risk or perception of Risk. The negative impact on the environment is often disregarded in the face of immense human suffering.

The composite nature of the Hazards that escalate the frequency or intensity of events and which could be used to prioritize monitoring of early warning indicators at the appropriate spatial and temporal scales has not been addressed. Formal quantitative Risk Assessment together with participatory appraisal risk at local level will address the risk of negative impacts on both people and environment. It will also support the design of a DRR intervention such that the earth/environment, social and economic process cycle is addressed. It is reported that Risk Perception at local and national levels differ and this has obvious impact on DRR interventions (HFA 3 & 4).

#### Monitoring, Early Warning & Dissemination

There are records and knowledge of good practice in certain Line Ministries, of the principles of Early Warning, Preparedness and Response e.g. MoA&FS (Drought with consequent Food Shortage or Famine), MoIWD, Floods (flow gauging on rivers and weather predictions), Droughts (weather prediction & liaison with MoA&FS) and MoH&P (monitoring various health indicators). This knowledge facilitates the implementation at local level through agriculture and health field and district officers supported by the activities of different UN and NGO agencies e.g. FAO, WFP, ActionAID and others. At present there are a number of institutional mechanisms (MVAC; FEWSNET) in place. These units receive data from

the ministries and different agencies and this allows routine modeling of credible and accepted data. The ministries and agencies are able, within one to two months of data collection; to issue early warning of a slow onset disaster (Food Shortage/Famine) at the scale of Livelihood Zones in Malawi. The results trigger distribution of Food Aid at a national level in response to critical shortages generally within a group of districts.

Because of the time involved in collecting (2 weeks), verifying (1week), submission to national office (up to 1 week), processing, modeling and reporting (2 weeks) the mechanisms in place for Early Warning of Food Shortage and Famine are not suited to early warning of a sudden increase in food shortage arising from a rapid onset event e.g. flooding. One of the reasons for this is that some of the possible vulnerability/early warning indicators of rapid onset flooding are not monitored. These indicators include; environmental degradation in head waters of catchments prone to flooding, analysis of rainfall patterns in vulnerable districts, interaction with early warning of cyclonic rains impacting island states in the Mozambique channel, rising lake levels, rising water tables in boreholes on alluvial flood plains indicating saturation levels, monitoring of flow levels in main stem of rivers amongst others.

There does not appear to be a formal process for dissemination of early warning at district, community and village level, which would guarantee a response by local agents. There is limited preparedness at local level, exacerbated by restricted funding, logistical support and ITC capacity. There are organizations actively engaged in training local community leaders and householders in Hazard Identification and Risk Assessment (HFA 2) and how to train others to do so ("Train the Trainer") but there is limited emphasis on the specific preparedness associated with observation of early warning signs at a local level;

<u>HFA 5</u> activities are designed to support preparedness and readiness at national and local level to respond appropriately regardless of the intensity, frequency or nature of the hazard that causes the disaster and regardless of the scale of the disaster.

#### **Preparedness**

A Joint Emergency Food Aid Programme (JEFAP) coordinated by the MoA&FS in the GoM was put in place between 2002/2005 and arose out of the lessons learned between 2001/2002. This mechanism proved very effective during the years of extensive to national scale food shortages but there is no standing protocol for response to small local scale pockets of chronic food shortage verging on incipient Famine. The various committees in the JEFAP structure do not routinely meet unless an emergency has been declared.

The record of disasters and their impacts suggest that catering for the secondary and tertiary impacts of disasters is not routinely integrated into the Emergency Response Protocols or Contingency Plans at either district or national level. Some districts have Contingency Plans but there was no particular mention of mitigation of these additional impacts into the primary emergency response or of integration of DRR measures in the recovery and rehabilitation process. This is also not reported in interviews or in the literature.

In the event of a rapid onset disaster the impact/loss assessment depends on the DoDMA officers and the various Civil Protection Committees that function at district level and include selected line ministry officers and local NGOs. These Committees only function in the event of an emergency thus the committees in the more disaster prone districts are somewhat more prepared than others having "Learnt by Doing". Despite this, local social and political issues can cause losses to be inflated and/or not reported, resulting in lack of confidence in information received at national level, additional costs being incurred in evaluation of impact/need and delays in initiating emergency response and accessing of funds and food aid. Similar factors can influence distribution of Relief items.

### Readiness/Response

Support mechanisms that were successfully implemented between 2001 and 2005 are not active between national emergencies. The transformation of the NFCTF into a forward-looking Food and Nutrition Security Joint Task Force is a shift in focus to issues of Risk Reduction. However, the former function should not fall away and possibly result in limited readiness for Emergency Management. Similarly, it is necessary that the DoDMA meet with all NDPRC regularly to ensure a smooth operation when called upon to coordinate emergency response. This should apply to all civil protection committees at district level.

### <u>Constraints</u>

Because Disaster Management/Emergency response activities depend on effective early warning, the constraints impacting on HFA 2 and HFA 5 activities are summarized together below. These are:

- Lack of capacity at local level stretch the resources of the DoDMA and take their focus away
  from strategic planning and coordination of activities and resources at national level. The lack of
  staff at district level militates against effective DM.
- A process is underway to address the need for a Disaster Risk Management Policy and Disaster Operations Guidelines/Manual but the lack of resources, capacity, preparedness at district level have a negative impact on Early Warning and DM;

#### Risk Assessment

- A comprehensive listing of the Hazards that threaten Malawi is available in the NDMP, 2004. There is not however a Comprehensive Hazard and Risk Assessment including scientific analysis of the scale(s) of complex causes and processes that precipitate the disasters and therefore no quantitative Risk Assessment. The strategic investment and prioritization of resources, design of early warning systems, particularly those that could be implemented at local level where the impact is experienced, and the design and prioritization of DRR interventions is impacted;
- The issue of differences in Risk perception at national and district level arises out of limited Participatory Risk Assessment at village level and is a significant constraint to DM in Malawi.
- Given the complex nature of vulnerability of communities in Malawi and the complex causes of the disasters themselves, the limited capacity to collect, collate, verify and process data at local level, the restricted and inadequate database, information management and communication protocols critically inhibit efficacy and effective response to disasters. Sound data and information management is essential for effective Early Warning, Emergency Management and therefore for effective DM. This has also been mentioned under HFA 1 as a function of cooperative governance and of inadequate funding of the DoDMA;

#### Early Warning

- There is no reported Early Warning and Response to Floods and Droughts process in place at local level, although mention was made that local communities in the flood prone southern districts were in earlier years able to "read" the river and know when to vacate low-lying areas. However, farmers are actively involved in warning of agricultural pests and cholera at a district level so far as capacity allows.
- There is no effective Early Warning System in place for Rapid onset Disasters either at national or local level.
- There is no Early Warning for environmental degradation, earthquakes and landslides;
- It appears that there is no monitoring for the emergence of secondary and tertiary impacts such as epidemics, water borne diseases and stress related violence and abuse.

#### Preparedness, Readiness & Response

 The various committees involved in Response do not meet routinely to support preparedness and readiness in event of an emergency; Processes and procedures followed in previous emergencies remain undocumented to support training, practice and clear definition of roles and responsibilities in changing circumstances;

### <u>Strengths</u>

In an environment where disaster is almost a chronic condition the strengths can easily be overlooked. However, they should not be underestimated. They are summarized below and need to be read together with those highlighted under the HFA 1.

- There is effective Early Warning of slow onset Food Shortage/Famine through the MVAC/FEWSNET; adequate EW and EM processes with respect to Agricultural pests; ready capacity in the International and NGO sector.
- There is record and knowledge of good practices in certain Line Ministries of the principles of Early Warning, Preparedness and Response e.g. MoA&FS (Drought with consequent Food Shortage or Famine), MoIWD (Floods (flow gauging on rivers and weather predictions)),

Droughts (weather prediction & liaison with MoA&FS) and MoH&P (monitoring malnutrition etc in rural health centers/hospitals).

- There is knowledge, experience and history of effective response to Famine and Food Shortage through the JEFAP;
- There is knowledge/experience, skill, capacity in the MoD/MDF in organization, logistical support, erection of temporary shelters, bridges, access roads, warehouse and store management, medical support and supplies. Bases are located in Southern, Central and Northern Districts.

### <u>HFA 3+4</u>

HFA 3 & 4 interventions are summarized together because they are not that easily distinguished in Malawi at present. HFA 3 activities address issues pertaining to longer-term education and technological initiatives implemented through research, tertiary, secondary and primary school level. The HFA 4 activities address the immediate challenges facing communities and focus on upgrading current coping capacity through training, involvement in Risk Assessment, improved land use and environmental practices.

The international and NGO sector are involved in DRR HFA 3 & 4 interventions or have expanded their scope from Relief Aid work to include DRR elements of education and training to build long-term resilience of the communities with a strong Rights based approached. Mitigation approaches include diversification of income, improved agricultural practice, and water storage inter alia. These projects are supported by the GoM programmes run by the MoLGRD (RDP), the MoA&FS (ADP) and the MoH&P. Only one organization interviewed in the Karonga district was involved in the socio-psycho elements of DRR. FBOs function in each diocese of Malawi but other organizations often function in a selected number of districts only. Very few organizations are actively involved in environmental aspects of DRR or monitoring and a number are building on the UN/ISDR initiatives to secure life-line infrastructure e.g. the Safe Schools Programme which utilizes buildings used as community centers and shelters to educate householders.

These activities are detailed in Volume 2, Annexure A.3 (Tables A.3.1 & A.3.2) and are aligned with the MDGs and or Adaptation to Climate Change. Generally, the stakeholder will interface with the relevant line ministry that advises in which district and community to implement the programme. The Line Ministries mentioned most often are MoEVT, MoH&P (Education/Nutrition/Health of Children and Women), MoA&FS (Improving Crop Production and Diversification), the MoLG&RD, and the MEPD. The MoIWD are involved through cooperation with the FAO in developing small-scale irrigation and water harvesting in Northern Malawi. There is no evidence that DRR initiatives are underway in larger scale economic initiatives such as commercial agriculture, infrastructure upgrade other than for seismic risk assessment.

Risk reduction; resilience, mitigation and preparedness is best understood and addressed at a village level with emphasis on understanding the socio-psycho and political issues. A number of the larger NGOs do now include an Inception Phase in DRR related projects. During the 2007/2008 flooding in the Lower Shire the importance of understanding issues from a community perspective was understood and acted upon by the DoDMA. A standard of Best Practice in DM was set which implicitly advocates a full and comprehensive engagement of villages, communities and Traditional Authorities (TA) in detailing of mitigation measures. This pattern illustrates that international best practice has rapidly percolated through to implementation of DRR interventions in Malawi.

#### **Constraints**

- There is a need for high level advocacy of an integrated and strategic approach to DRM amongst parliamentarians, cabinet and senior officials in the Line Ministries and partners of the GoM to ensure that DRM best practice is mainstreamed in all development programmes and initiatives undertaken;
- Projects are run over 2 –3 years, less than the time needed to secure sustained change. There is a shift to a programmatic approach but strategic Risk Assessment that includes Participatory Rural Appraisal must underpin design, duration and prioritization of interventions;
- Identification of factors influencing Risk and DRR interventions seldom consider the relationship between environmental/earth processes and socio-economic-psycho factors. Environmental factors are an influence on coping capacity, vulnerability and on the scale, frequency and intensity of selected Hazards (floods, landslides). It is critical that these factors are well

understood and taken into account when deciding where, what and for how long a DRR project should be undertaken; An integrated Catchment Management approach is suggested;

- Local based NGOs are challenged to keep pace with the international debate, changes in conceptual approaches and strategies of funding agencies; there is a big difference between the local and international NGO access to information and resources (technology, training, opportunity). This weakens the capacity to secure funding for long term strategic initiatives based on local imperatives and know-how;
- Monitoring and evaluation of interventions does not include continued assessment to establish sustainability; there is no insight into what ratio of DRR budget is expended at village level.

### **Strengths**

- DRR is already being mainstreamed through Line Ministries securing a multi-sectoral approach in the future and is aligned with national and regional programmes;
- Implementation is primarily at community level and through local NGO, CBO and FBOs, thus building local capacity while international NGOs are primarily acting as Project Managers.

#### **Summary Conclusions and Recommendations**

DM is the primary activity considered in the Disaster Management Act 1991 (Act No 27) and called for in the Draft NDMP, 2004. Since the Act was promulgated in 1991, there has been steady institutional learning in effective DM but the socio-economic challenges faced in Malawi today require that rapid progress be made. Socio-economic data and reported impact of disasters pre 2003 and post 2003 suggest that the Vulnerability of the Population & Environment is increasing and the Coping Capacity is decreasing. Some hazards are increasing in scale or frequency. Some issues known to be challenges when addressing complex disaster are evident in Malawi.

Environmental degradation is an insidious and significant hazard given the population pressures, vulnerability and carrying capacity of the land. DRR projects need to consider the geographic and temporal scale of the earth and environmental processes interacting with the obvious hazards of Flood and Drought. Mitigation does not continue long enough to secure sustained change. There are delays for a variety of reasons between the onset of the disaster and arrival of Relief Aid and DM is not addressing the secondary and tertiary impacts that persist long after the primary disaster impact.

The Early Warning and coordination mechanisms for response to slow onset disasters such as Famine and Malnutrition arising from Drought have been effective since 2004/2005. While the MVAC functions routinely, the committees that coordinate response to food shortage (e.g. JEFAP) and to disasters do not. Early warning for rapid onset disasters is limited and there is no routine protocol to manage response to them. This is compounded by no defined, quantifiable criteria to be used in declaring a disaster and limited capacity at local level to assess impact/loss.

There is no clear delineation of roles and responsibilities for different line ministries in the DM process (HFA 2 & 5) and the mainstreaming of DRR into development (HFA 3 & 4). HFA 3 outcomes require a long-term programme of sustained and maintained involvement of children throughout their education as well as focused advocacy at all levels of government to support and coordinate this approach with the activities at community and household level (HFA 4). Interventions must be specific to the risks a community faces and mitigation measures must be sustainable.

Recommendations arising from this study pertain primarily to HFA 1 and HFA 2 & 5. The recommendations are based on the assumption that the National Platform and proposed Guidelines/Manuals will be in place shortly, that DoDMA maintains focus on DM and coordination and prioritization of DRR interventions while the Line Ministries maintain and expand their focus on DRR. To support this it is suggested that:

- 1. DoDMA undertake high level advocacy and promotes political will for sustained Disaster Risk Reduction and Disaster Management interfacing with Line Ministries to:
  - Mainstream DRR into all current and future development projects and routine line function (MoA&FS, MoH&P, MoLG&RD, MoEVT, MoIWD, MoMNR&E, MEPD inter alia) advising on HFA 2,3&4 activities with emphasis on education;
  - Prioritize investment at district and community level with an emphasis on monitoring for Early Warning and training for Disaster preparedness and immediate local response based on RA output;

To realize effective Emergency Management the following will be necessary:

- 1. Fund the DoDMA as appropriate to meet (updated) TOR in the Act and to equip the unit detailing skills, equipment and financial requirements with well defined roles and responsibilities for all staff of the DoDMA during development of Operations Guidelines/Manual and National Platform;
- 2. Undertake a Training programme for civil protection committees and community leaders adopting a Train the Trainer approach in the disaster prone *and* most vulnerable districts with emphasis on Early Warning, Preparedness, impact and Loss Assessment and local Relief and Response;
- Identify scale (space and time) required for EW monitoring and DRR intervention based on a formal scientific Hazard Identification and Risk Assessment aligned with results of Participatory Rural Risk Assessment identifying key indicators for local and national monitoring disaster prone districts;
- 4. Improve coordination and utilization of existing and available resources such as the MDF, MoH&P, MoA&FS, MEVT (amongst others) and international agencies and civil society through regular meeting of the NDPRC Function Specific sub-committees at national and local level to ensure preparedness in the event of an Emergency regardless of the scale or intensity. This will support prompt and effective DM and that secondary and tertiary impacts of a disaster are identified and acted upon.

#### To achieve any of the above it will be necessary that:

- A scientific Hazard Identification and Risk Assessment at a national scale and at a local scale in the districts most prone to flooding and drought and vulnerable to landslides and earthquakes is essential. This refers to *complex disasters* and the role of environmental degradation in escalation or precipitation of risk; and including the low frequency, high-impact hazards such as major earthquakes and health-related secondary and tertiary impacts arising from floods and droughts. This is considered base line planning information for all DRR related interventions;
- 2. A comprehensive mapping of current stakeholders, roles and activities crossreferenced to risk assessment and geographic area is needed as a base line planning data base to support effective coordination and cooperation between line ministries and external agencies.

In parallel with items 1 and 2 and necessary to support ongoing use of the data and information obtained, it is necessary that:

3. An appropriate DRM geospatial database is designed, developed, correctly populated and maintained. This will support communication and effective decision-making during an emergency. A relational-database format with consistency in the definitions of Hazard and Risk Assessment is recommended, as is a need for more precise dating of episodes and more specific spatial definition/georeferencing of the disaster events and their area of impact. This would support standardization of impact loss reporting aligned with the process of impact assessment through the civil committees. Such standardization must include gender and age specific data on deaths, injuries and other forms of casualty, numbers displaced, loss of income/assets (in monetary terms), secondary epidemics, and volumes/cost of relief items and areas of distribution by all parties including Recovery and Rehabilitation. Collection of data on those indicators selected will allow monitoring of the sustainability of DRR and DM related interventions in communities and coordinate the monitoring and evaluation of DRR interventions with Disaster Loss and Cost analysis.

# Situation Analysis of Disaster Risk Management Programmes and Practices in Malawi

# **Table of Contents**

# Volume 1

E	Executive Summaryi						
Та	able of	Contents	xi				
1	Introduction						
1.1 Background							
	1.2	Objectives and Scope of Work	. 3				
	1.3	Report Structure	. 4				
2	Hist	orical Overview of Disasters in Malawi	.5				
	2.1	Definitions and Categories	. 5				
	2.1.1 2.1.2	Hazard Classification Disaster definition	. 5 . 6				
	2.2	Malawi Disaster Profile	. 7				
	2.3	Hydro-meteorological disasters	11				
	2.3.1 2.3.2 2.3.3 2.3.4 2.3.5	Flood Severe local storms and Mwera winds Drought Heatwave and wildfire Impact of Floods and Droughts on Food Security	11 13 13 13 13				
	2.4	Geological disasters	16				
	2.4.1 2.4.2 2.4.3	Earthquake Landslide and ground instability Volcanic activity	16 16 17				
	2.5	Biological disasters	17				
	2.5.1 2.5.2	Disease epidemics	17 18				
	2.6	Technological disasters	18				
	2.6.1 2.6.2 2.6.3 2.6.4	Environmental Degradation Industrial Accidents Transportation Accidents Social Unrest, Terrorism and Civil Strife	18 19 19 19				
3	Ove	rview of current DRR in Malawi	20				
	3.1	Stakeholders in Disaster Risk Management	21				
	3.1.1 3.1.2 3.1.3 3.1.4	Government of Malawi – Involvement in DRM Key Donor Organisations Non-governmental Organizations Summary of Roles and Responsibilities	21 24 25 26				
	3.2	Disaster Risk Reduction Policies, Programmes and Practices	31				

5	Refe	erences	63
4	Con	clusion and Recommendations on Key Policy and Strategic Issues in DRM	59
	3.3.5	5 HFA – 5: Be Prepared and Ready to Act	52
	3.3.4	HFA 4: Reduce the underlying Risk	50
	3.3.3	B HFA 3: Build Understanding and Awareness	46
	3.3.2	2 HFA –2: Know the Risks and Take Action	41
	3.3.1	HFA –1: Making Disaster Risk Reduction a National Priority	36
	3.3	Strength, Challenges, Constraints and Opportunities in DRM	33

# Volume 2

# Annexure

Annexure A Tables and Figures, Section 3

# Appendices

- Appendix A Copy of TOR
- Appendix B International Perspective on Disasters in Malawi: CRED and GLIDE Source Analysis
- Appendix C Earthquake Hazard and Geo-risk Assessment in Malawi
- Appendix D Summary Table of the HFA
- Appendix E List of persons interviewed
- Appendix F Definition of Millennium Development Goals

## List of Abbreviations

# List of Figures

Figure 1-1	Locality map	2
Figure 2-1	Satellite image of Tropical Cyclone Delfina on 1 January 2003	12
Figure 2-2	Trends of rainfall and temperature in Malawi	14
Figure 2-3	Maize Production Variations (1990 – 2006).	15
Figure 3-1	Line of communication with respect to all DRM structures from village to cabinet	
	level and the President	22
Figure 3-2	Organogram of the Food Crisis Joint Task Force	25
Figure 3-3	Organizational Chart of the Joint Task Force Structure; after Phiri (2004)	29
Figure 3-4	Components of Disaster Risk Management; after USA's Federal Emergency	
0	Management Agency (2008)	35

Figure A.3.1	Involvement of WFP in Food Security and Food Aid	Annexure A
Figure A.3.2	Involvement of different NGOs in disaster relief	Annexure A

# List of Tables

Table 2-1	Hazard Classification	5
Table 2-2	Malawi disasters abstracted from National Disaster Management Plan (2004; Draft)	8
Table 2-3	Ten most deadly disasters in Malawi (from NDMP and NPoD sources)	12
Table 3-1	Expenditure trends by major sector in Malawi: 1992/93 to 2003/04	23
Table 3-2	Roles and Responsibilities of Key Institutions (Government, Donor and larger NGO) in Disaster Risk Management	30
Table 3-3	HFA Priority Areas of Action and Millennium Development Goals addressed in the NAPA Priority Activities.	
Table 3-4	Hyogo Framework of Action Priority Area of Action	34

Table A.3.1	Government Organisations involved in DRM in Malawi	Annexure A
Table A.3.2	Key Donor Organisations involved in DRM in Malawi	Annexure A
Table A.3.3	NGOs involved in DRM in Malawi	Annexure A
Table A.3.4	Legislation, Strategies, Policies and Frameworks relevant to DRM in Malawi .	Annexure A
Table A.3.5	Summary of Early Warning Systems	Annexure A

# List of Text Boxes

24 26 28 32 36 42 44
42
44
45
46
47
53
- - - -

# **1 INTRODUCTION**

# 1.1 Background

Due to climate change and other natural factors, Malawi is exposed to various types of natural and manmade hazards, occurring with increasing frequency in the recent past, sometimes resulting in serious disasters leading to severe food insecurity, loss of lives and property. The risk and vulnerability to natural and man-made disasters in Malawi are a reality. The main types of hazards experienced include: floods, drought, pests, strong winds and tropical cyclones, earth tremors and earthquakes, economic crisis and market failure and refugees (Phiri, 2005). Floods and drought are the most frequent hazards affecting Malawi. Drought is the greater threat in geographical range and economic effect.

Relative to other parts of Africa and the sub-region, Malawi as a whole would not fall into the category of Intensive Disaster Risk, which is defined in the DRR Global Review (UN/ISDR 2007) where people and economic activities are heavily concentrated in areas exposed to occasional or frequent hazard events with chronic impacts. It is, however, possible that selected districts in the country particularly those along the Lakeshore and in the Lower Shire could be classed in this category. The scale, intensity and frequency of events however, are less than that of areas more typical of this category e.g. cyclone flooding in Mozambique, drought in the Sahel or cyclones in Madagascar. It can be argued that these districts fall into the higher impact end of what is considered to be Extensive Disaster Risk, where people are exposed to highly localized hazard events (mainly floods and droughts) of low intensity, but with frequent asset loss and livelihood disruption over extensive areas.

Droughts and floods have alternated in most of the areas referred to above. Malawi has experienced 2 major droughts in the past 50 years (1948/49 and 1991/92) and a number of floods related to cyclonic weather patterns in 1946, 1956, 1991, 1997, 2001, 2003 and more recently in early 2008. Floods have impacted different river basins but the Lower Shire is the most severely and most frequently affected. It is also the only area where limited monitoring and an early warning system (EWS) are in place, but not necessarily fully functional (see **Figure 1-1**). In general, the flood problem in Malawi seems to be exacerbated by a number of man-made problems stemming from population pressure and environmental degradation. Localized drought occurrences have also been more frequent in the southern region and result in more pronounced impacts due to the higher population density in the area.

Despite the frequent occurrence of droughts and floods, disaster prevention, preparedness and response systems have remained weak or non-existent in Malawi. This is evidenced by gaps in the policy and legal frameworks; an incomplete and draft National Disaster Management Plan for several years; lack of comprehensive early warning systems for several types of disasters; lack of contingency plans for several types of disasters; and the lack of coordinated frameworks and programs. This study was motivated by these weaknesses to comprehensively understand the current situation in terms of practices and approaches by different authorities at various levels with the aim of identifying strategic issues to inform the development and adoption of the National Disaster Risk Reduction and Management Policy and Strategies.

Several studies have been undertaken detailing the socio-economic impact of disasters on the population, especially the rural population of Malawi. The findings of this study are based on a comprehensive literature review, consultations with various relevant government departments at national as well as district levels, selected donors, UN agencies, Non-Governmental Organizations (NGOs) and Faith Based Organizations (FBOs).





## 1.2 Objectives and Scope of Work

The purpose of the Situation Analysis was to provide an overview of the current status of disaster risk reduction and management related policy issues and practices in Malawi. Specifically, the objectives of the study were as follows:

- 1. To produce a Rapid Assessment of disaster risk management practices in Malawi. This included an overview of:
  - i. definitions and categorizations of disasters;
  - ii. challenges, constraints and opportunities; and
  - iii. an analysis of the stakeholders involved in disaster risk management.
- To carry out an overview of Disaster Risk Reduction (DRR) related policies and practices of both the Government of Malawi (GoM) and civil society with a view to developing a clear and concise "snap shot" of DRM and DRR related strategies, policies, frameworks, programmes and practices in Malawi; and
- 3. To present recommendations on policy and strategic issues to be considered in the formulation of the National Disaster Risk Management Policy and Strategies.

Detailed Terms of Reference including scope of works are included in **Appendix A**.

There was agreement amongst GoM and national stakeholders as well as those in the UN system and international sector that the key hazards to focus on in this study are floods and drought in the context of climate change and variability (29/02/08). There was also recognition of the need to meet the challenge of responding to intermittent higher impact disasters arising from floods and droughts as well as the cumulative impact of small-scale disasters on a vulnerable population and environment that has resulted in pervasive and almost chronic Food Insecurity (FI) and Malnutrition. Chronic poverty and lack of Food Security (FS), amongst other factors, undermine the repeated efforts to build the capacity to cope with and overcome the cumulative impacts of small and large scale disasters at the individual, household and community level. FS is accepted to be a complex problem that must be addressed as a keystone to successful disaster mitigation.

There is a complex map or interrelationship of various natural, institutional and human circumstances that comprise Disaster Risk Reduction (DRR) and Disaster Response and Recovery or Disaster Management (DM) drivers and processes in Malawi. To understand these complex interrelationships, the Hyogo Framework of Action (HFA) has been adopted for the analysis. The HFA identifies a number of priority areas for action for the period 2005 – 2015 as agreed during the World Conference on Disaster Reduction held from the 18<sup>th</sup> to 22<sup>nd</sup> January 2005 in Kobe, Hyogo, Japan. Malawi is a signatory to the HFA along with many other African countries. It is adopted in this report as a common frame of reference amongst all actors in Malawi and to align policy and strategy recommendations with best practice internationally. The HFA supports the implementation of a multi-hazard, multi-stakeholder approach to DRM and facilitates the mapping of roles and responsibilities of the many parties involved in DRR & DRM in Malawi. Furthermore, it enables the methodical identification of key enabling and inhibiting issues and a structured discussion on the strategic approach needed to move forward.

As per the scope of work and objectives of this study (see **Appendix A**), the emphasis is on the Disaster Response and Recovery activities detailed under the HFA Priority Area 5, but the interrelationships with HFA 1 – 4 that impact on the efficacy of HFA are discussed as needed. All elements of the HFA are considered in outlining recommendations and input to strategy and policy. A recent study funded by the UNDP puts the macro and micro economic, cumulative and singular impact of disasters of various scale on Malawi into perspective (Benson and Mangani 2008).

# 1.3 Report Structure

This report presents findings of the Situation Analysis of Disaster Risk Reduction (DRR) activities in Malawi as the first stage of the processes and activities to be undertaken in the development and adoption of the National Disaster Risk Management Policy and Strategies. Although other years have been referred to, the analysis has mainly focused on the period from 1992 to-date.

<u>Chapter 1</u> provides the background to this study and summarizes the objectives and scope of work as agreed with the World Bank and the DoDMA.

<u>Chapter 2</u> gives a historical overview of disasters in Malawi, highlighting the variety and complexity of natural and man-made disasters, indicating the spatial distribution of different disasters and describing the increase in frequency and severity of disasters in Malawi during the past 30 years with a focus on events of the past two decades. Case studies summarizing the disaster management of selected Droughts and Floods are presented as a basis for the analysis that follows in Section 3.

<u>Chapter 3</u> provides an overview and analysis of the current Disaster Risk Management legislation, policy and practice in Malawi. The different roles and responsibilities of stakeholders are summarised and gaps in process, policy and practice are identified with specific reference to case studies in Section 2. Case studies based on the Malawian and international experiences are presented as examples of national and international best practice.

<u>Chapter 4</u> gives a number of key recommendations to improve the Disaster Risk Management in Malawi.

Further information and details are provided in the appendices.

# 2 HISTORICAL OVERVIEW OF DISASTERS IN MALAWI

## 2.1 Definitions and Categories

To avoid terminological inconsistency in the situation analysis, it is necessary to briefly discuss a classification of hazards to which Malawi is exposed, and internationally accepted definitions of disaster.

### 2.1.1 Hazard Classification

The hazard classification used here (**Table 2-1**) is adapted from that provided in the UN/ISDR publication, "Living with Risk" (UN/ISDR, 2004), but with minor amendments influenced by the National Disaster Management Plan for Malawi (Final draft, GoM, 2004). The UN/ISDR classification separates technological hazards from *environmental degradation*, defined as "processes induced by human behavior and activities (sometimes combined with natural hazards) that damage the natural resource base or adversely alter natural processes or ecosystems". Because the damaging behavior and activities invariably have a basis in some form of human technology, whether advanced or not, environmental degradation is here considered part of the suite of technological or "anthropogenic" (human-induced) hazards as much for simplicity sake as highlighting the issue. Environmental degradation could be a Hazard Category and further subdivided, but such detail cannot be addressed in this report.

Table 2-1	Hazard Classification

Hazard (potentially damaging physical event, phenomenon and/or human activity, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation)

Hazard category		Hazard type		
		<u>Floods</u>		
	Hydro-	Tropical cyclones		
	meteorological	Severe local storms and Mwera winds		
		<u>Droughts</u>		
		Heatwave and wildfire		
	Qualitation	Earthquakes and lake tsunamis		
Natural	Geological	Landslides and ground instability		
		Volcanic activity		
		Disease epidemics		
		Insect-borne diseases		
	Biological	Water-borne diseases		
		Socially communicable, infectious diseases		
		Invasive infestations		
		Insect pests		
		Plant pests or weeds		
		Environmental Degradation		
		<u>Famine</u>		
Technological		Infrastructure failures		
		Industrial Accidents		
		Transportation Accidents		
		Social Unrest, Terrorism and Civil Strife		

Malawi is potentially affected by all hazard types listed in **Table 2-1** above. The hazards that are italicized and underlined are particularly conspicuous in the country's disaster profile.

### 2.1.2 Disaster definition

According to the Centre for Research on the Epidemiology of Disasters (CRED), who maintain an extensive, international, on-line database (EM-DAT; cf **Appendix B**), a disaster is defined as:

"A situation or event which overwhelms local capacity, necessitating a request to the national or international level for external assistance, or is recognized as such by a multilateral agency or by at least two sources, such as national, regional or international assistance groups and the media."

The UN/ISDR definition describes a disaster as:

"A serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community/society to cope using its own resources."

For a disaster to be entered into the EM-DAT database <u>at least one or a combination of</u> the following criteria must be fulfilled:

- 10 or more people reported killed
- 100 people or more reported affected
- Declaration of a state of emergency
- Call for international assistance.

Compiled from various sources, including UN agencies, governmental institutions, insurance companies, research institutes and the media according to a priority list set up by CRED, EM-DAT is validated and updated daily.

Because it is an external, international and easily accessible perspective of the disaster profile of Malawi, which may differ in some respects from the internal, national record maintained by Malawian authorities, the essential disaster information provided by EM-DAT is further discussed and analysed in **Appendix B**.

The Disaster Preparedness and Relief Act, 1991 (Act No 27) of Malawi provides the following *qualitative* definition of a disaster, stating in Part 1, Item 2 that a "disaster" means an "occurrence (whether natural, accidental or otherwise) on a large scale which has caused or is causing or is threatening to cause -

- a)....death or destruction of persons, animals or plants;
- b) disruption, pollution or scarcity of essential supplies;
- c) disruption of essential services;
- d) influx of refugees into or out of Malawi;
- e) plague or epidemic of disease that threatens the life or well-being of the community.
  - and includes the likelihood of such occurrence".

The National Disaster Management Plan (NDMP) for Malawi (Final draft, GoM, 2004) provides definitions of various natural and human-induced hazards (floods, droughts, landslides, pests, etc.), but provides no definitive threshold criteria for disaster declarations. Although the process of data collection and communication - and the description of roles and responsibilities of parties assigned to undertake various activities - is detailed, the initiation of emergency response is left to the best judgment or discretion of the decision-makers at national level, with input from international partners and key committees, as well as from local level actors. As can be seen from the case studies presented in this section, the formal decision to declare a disaster is based on consensus between all actors working through various committee structures.

The distinction between Risk (R) and Hazard (H), as applied in the UN/ISDR definition of risk ( $R = H \times V/C$ ; where V = Vulnerability and C = Coping Capacity), is not clearly made in the NDMP document. In assessing the relative magnitudes of risk to Malawian society posed by different types of hazards and prioritizing between them, the distinction is important, as a hazard only becomes a disaster if it impacts negatively on society or on the environment that sustains lives and livelihoods.

By contrast to the uncertainty around Hazard Assessment, the Malawi Vulnerability Assessment Committee (MVAC) has clear criteria that are used to declare a Food Shortage and initiate response activities. It uses the WRSI Maize model to calculate a composite vulnerability variable based on various indices (income/asset base, crop production, health and agricultural practice), and can issue a warning of unacceptable levels of malnutrition within 1 month after all data is collated.

## 2.2 Malawi Disaster Profile

The main national sources of disaster information used in this review are

- 1) the 2004 Draft of the National Disaster Management Plan (NDMP) for Malawi and
- 2) the National Profile of Disasters (NPoD) in Malawi.

The latter is an Excel spreadsheet database consisting of several hundred row-entries between 1946 and June 2005, each categorized under five column-headings, viz.

- 1. Year
- 2. Nature of disaster
- 3. Place
- 4. Extent of damage
- 5. Action taken

There is no consistent categorization of the incidents in terms of modern hazard classification, as outlined in Section 1.1.1 above. Furthermore, the dating of the incidents listed in the NPoD is generally vague, in many cases only by year but mostly by year and month, and in a number of cases inconsistent with the short-term duration of the incident. For example, the 1989 March 10 Salima earthquake, which had duration measured in minutes at most, is only dated by year. Moreover, the same earthquake has three separate row entries for each of the places at which fatalities occurred (Salima, Dedza, Mchinji).

In the case of hazards/disasters with a longer-term duration, there is a similar repetition of entries in the NPoD for several different places. The widely distributed effects of Cyclone Delfina, for example, appear under no less than 13 separate entries for "flooding" in different areas, dated between "December 2002" and "8-9 January 2003". These deficiencies notwithstanding, the NPoD is a useful source of information about local impacts and extent of damage related to particular events. In a few cases, the list also contains entries that, by any current definition, do not appear to classify as disasters (e.g., 1987 boat accident in which only 2 children died, which is a disaster for the family but not for the nation; 29 July 1987 air crash in which 5 army personnel died).

Information gleaned from the 2004 Final Draft of the National Disaster Management Plan, which refers to disasters current to the year 2003. The compilation of disaster references, mostly cursory, in this document (**Table 2-2**) also includes disasters dating from the early part of the 20<sup>th</sup> century (1915-1924, in the case of influenza epidemics). This compilation has been arranged according to the UN/ISDR or CRED classification of disaster groups or types, and disasters within each category are listed in reverse chronological order.

The early 20<sup>th</sup> century disasters, for which it is yet to be ascertained if they meet the modern criteria for entry into the CRED EM-DAT compilation, are mostly of the biological epidemic sort, including influenza, measles, smallpox and meningitis, mostly before 1960. There is brief mention of severe flood in 1942, 1946 and 1956, and drought in 1948/1949. No statistical data is provided on the impacts and/or costs of these early events.

# Table 2-2 Malawi disasters abstracted from National Disaster Management Plan (2004; Draft)

(Gaps in table indicate that data is not supplied by the source)

Disaster Group	Date	Disaster Type	Locality	Deaths	Affected	Cost
	2003	Flood	Rivirivi River			
	2001	Flood	Malawi flood-prone areas, widespread			
	1997	Flood	Bangula-Chiromo railway line			
	1991 March	Flood	Likangala/Thonde river system			
	1975/1976	Flood	Linthipe River system, Salima			
	1956	Flood	Lower Shire valley, Chiromo			
	1942	Flood	Lower Shire Valley			
Hydro- meteorological	2000	Cyclone / Flood (Eline/Japheth)	Malawi			
	1980s (early)	Cyclone / Flood	Karonga Town		Lakeshore areas, by high lake levels / surge arising from heavy storms	
	1946	Cyclone / Flood / Landslide (Edith)	Zomba	22	3 villages destroyed	
	2003 Jan-Feb	Severe storm	Mwanza, Salima, Rumphi, Mzimba, Nkhotakota, Mchinji, Zomba		At least 3000 families	
	2000 December	Windstorm	Nkhata Bay District		34 households	
	1991/1992	Drought	Malawi			
	1948/1949	Drought	Malawi			
	1989 March 10	Earthquake	Salima	8		
	2003 February	Landslide/Flood	Ntcheu			
Geological	1991	Landslide/Flood	Michesi Hills (Phalombe)	500	River flooding from failure of temporary dam created by landslide	MK 59 million
	1991	Landslide/Flood	Chilema/Malosa			
	1989	Landslide/Flood	Manyni Hill (Kasungu)			
	1989 August	Landslide/Flood	Nyambilo Hill (Nsanje)			

Disaster Group	Date	Disaster Type	Locality	Deaths	Affected	Cost
	2007 Nov -2008	Epidemic (Cholera)	Nsanje, Mulanje, Balaka, Blantyre, Chikwawa, Thyolo, Ntcheu, Nkhotakota	5	434	
	2006 October - 2007 May	Epidemic (Cholera)	Malawi	55	4148	
	October 2001- April 2002	Epidemic (Cholera)	Southern Malawi mainly	981	33150	
	1999	Epidemic (Cholera)	Malawi	648	26508	
	1995	Epidemic (Rabies)	Rumphi, Mulanje	5	484	
	1994-2002	Epidemic (Influenza)	Nsanje			
	1993	Epidemic (Cholera)	Central and Southern Malawi	524	25193	
	1989/1990	Epidemic (Cholera)	Malawi	497	21808	
	1978	Epidemic (Cholera)	Southern and Northern Malawi	21	345	
Biological	1960	Epidemic (Smallpox)	Malawi		1465	
	1955-1960	Epidemic (Influenza)	Nsanje			
	1939-1952	Epidemic (Measles)	Nsanje, Mangochi, Dedza, Mchinji, Mzimba, Chintheche		2391	
	1934	Epidemic (Smallpox)	Malawi		over 20000	
	1931-1933	Epidemic (Meningitis)	Mchinji, Dowa		1081	
	1925	Epidemic (Measles)	Lilongwe		2067	
	1915-1924	Epidemic (Influenza)	North Nyasa			
	1990/1991	Pest (Leaf roller)	Mangochi, Salima, Nkhotakota			
	1989-1992	Pest (Cassava mealybug)	Karonga, Nkhata Bay and Nkhotakota			
	1987-1991	Pest (African army worm)	Lower Shire, Lake Chilwa Plain and Lakeshore			
	1986	Pest (Cypress aphid)	Zomba, Chikangawa, Dedza, Mulanje			
Technological	1992	Economic (Strike)	Malawi (David Whitehead & Sons)	22	4000	
(Social)	1987-1992	Social (Mozambique refugees)	Malawi-Mozambique border villages		over 1 million	

A global, country-by-country analysis of the EM-DAT disasters database (**Appendix B**) for the 30-year period 1974 to 2003 (Guha-Sapir et al., 2004) provides a summary total of 25 natural disasters with a cumulative number of victims (killed and affected) amounting to over 25 million people. When pro-rated to population as the mean annual number of victims per 100 000 inhabitants, the staggering result (8747.6) places Malawi as the worst affected of the 10 poorest countries in the world, far exceeding Eritrea (6402) and Ethiopia (5259) as the second and third worst-affected poor nations (Guha-Sapir et al., 2004, Table 5, p. 34). Malawi, Eritrea and Ethiopia are cited as conspicuous examples of the well-documented relationship between poverty and the impact of disasters, via the key factor of the greater vulnerability of a poor nation's population to a hazard's occurrence.

In this 1974-2003 period, the main hazards affecting Malawi are the hydro-meteorological kind (24 of 25), with flood (16 of 24) being the dominant sort in terms of number of occurrences, although mean annual number of victims per 100 000 inhabitants for drought (8084) far exceeds that for flood (608). The single geological disaster occurred in 1989 as the magnitude 6.1 earthquake in the Salima area, which killed only 9 people but which affected over 50 000, and which caused damage of about US\$28 million. Disasters of a biological kind (i.e., epidemics) are not treated in the1974-2003 review (Guha-Sapir et al., 2004), perhaps because they are considered less "natural" than those of the hydrometeorological or geological kind, or linked to failures of modern health and hygiene technology or practice.

Hazard analysis and risk assessment must be pertinent at the local scale, i.e., the scale at which the impact is felt. Risk has a temporal element that must be overtly factored into account. Furthermore, when vulnerability is a primary driver behind the negative impact of a particular hazard, the hazard itself can be perceived to be the obvious priority when any other hazard would impact at least as much. In this case the frequency of a hazard is critical, as are the resultant secondary and tertiary impacts arising from it. The context of chronic poverty, poor health and food insecurity, as well as HIV/AIDS, increases the number of people impacted by drought and floods. Epidemics are often secondary and tertiary impacts of both floods and droughts, increasing the vulnerability, hampering recovery and reducing short to medium term resilience. Given the apparently increasing frequency of floods and droughts, as well as a context of greater vulnerability, attention as to how the cumulative impact of epidemics at a household level challenges DRR interventions and food security may well be warranted. There is certainly merit in establishing whether the same is true in Malawi as often found elsewhere, viz., that the secondary and tertiary impacts are often worse than those arising from the primary event. Detailed understanding of the spatial and temporal occurrence of epidemics is needed in the context of droughts and floods to better inform and prioritize DRM activities.

That said, analysis and recommendations in this report focuses on floods and droughts as per the terms of reference. To this end several case studies were analysed with respect to their impact on the Malawian population. The disaster of 2001/2002 is of a more complex nature and presented as a case study below.

### Box 2-1 The 2001/2002 Food Crisis

#### 2001/2002 Food Crisis - The Disaster

Food shortages in Malawi began in late 2001, followed by flooding in early 2002, which destroyed the crops that had been planted, and caused further reductions in food availability and consumption. On February 27, 2002, the President of Malawi declared the food situation a "State of Disaster", and appealed for international assistance to respond to the crisis, stating, "Malawi is facing a catastrophic situation with up to 78% of farm families (2.2 million households) being without food". This was one of the most critical shortfalls in food crop production, particularly maize due to erratic rainfall, floods and dry spells that occurred in most parts of the country. The situation was exacerbated by the fact that the country had very low levels of national cereal stocks following two successive poor harvests as a result of a combination of excessive rainfall and flooding and dry spells.

Following the President's declaration of the state of natural disaster at the end of February, 2002, the Malawi Government in coordination with the donor community, the Non-Governmental Organizations and the private sector embarked on a strategy to contain the food shortage in order to prevent the escalation of a full blown famine. There was an overwhelming positive response, particularly from the donor community. The Malawi Government through the Department of Disaster Preparedness, Relief and Rehabilitation and the Ministry of Agriculture, donors, the UN and the NGO Consortium launched the Joint Emergency Food Aid Programme (JEFAP) as a coordinated humanitarian response to the food crisis. JEFAP was designed to facilitate standardized programme implementation at the field level and ensure unified information sharing and decision making at the national level.

Although JEFAP was very successful in achieving the core objective of getting relief food items to the communities at the time when they needed it most, the programme was not without some operational problems. Firstly, as reported by Phiri (2004), targeting of beneficiaries was a major challenge. NGOs took the central and active role to monitor the authenticity of the targeting, but in most cases local leaders and Village Relief Committee (VRC) members deliberately left out some of the most vulnerable households frustrating their efforts. This challenge was mainly explained by the limitations in the quantity of the rations made available for distribution at a time when almost everybody in the communities was running short of food. Hence, to some extent, "everybody was vulnerable or deserved to be targeted." Secondly, logistical problems accounted for the bulk of the operational difficulties the stakeholders experienced. In most cases, especially after the on-set of the rains it was difficult to obtain reliable transportation in view of the poor condition of rural feeder roads. Thirdly, there were major practical problems that Food Distribution Monitors encountered which related to complaints of theft or loss of food items as well as confiscation of beneficiary tickets. These complaints were received from targeted beneficiaries and arose in the context of the overwhelming demand for relief food items against a limited number of approved beneficiaries.

The challenges faced, particularly at the village-beneficiary level, in some cases negatively affecting the local leadership, and obscured the positive impact of a very successful programme that averted what would have otherwise been a major famine;

## 2.3 Hydro-meteorological disasters

In the existing databases of hydrometeorological disasters (cf. **Table 2-2**) the incidences of flood outnumber those of drought, but drought disasters have had greater net impact (cf. **Appendix B**).

### 2.3.1 <u>Flood</u>

In the listings of flood disasters, particularly in the NPoD, it is often not clear that many of these are caused by a large meteorological system, viz., the tropical cyclones that arise in the Western Indian Ocean and occasionally penetrate far inland as deep tropical depressions. These meteorological systems affect Malawi by advecting moist air northwards from the warm-water areas of the Mozambique Channel. The flood of 1946 was linked to tropical cyclone Edith, and that in 2000 to Eline (**Table 2-2**).

In the case of the widespread flood disaster in January 2003, most of the flooding was caused by Extropical Cyclone Delfina (**Figure 2-1**), which made landfall over northern Mozambique on 31 December 2002 and produced rains (up to 600% of normal) over northern Mozambique, parts of Malawi, and northern Madagascar on 4-5 January. Resultant floods damaged crops, roads, bridges, and urban water supply systems. Furthermore, in this wider region of Malawi and its neighboring countries, "...18,000 to 20,000 houses were destroyed, and 350 schools were damaged. The number of affected people was 100,000 as of 10 January ... Flooding continued from 1 January to 17 February, killing 23 people and displacing 400,000 ..." (Kadomura, 2005).



Figure 2-1 Satellite image of Tropical Cyclone Delfina on 1 January 2003

Malawi was severely affected because Delfina penetrated as a deep depression to southern Malawi and then stalled to move slowly southwards over a period of more than a week. In the Delfina case, however, a senior Malawian government official was quoted as saying that environmental degradation was also to blame for the extent of the disaster, because tree cover was being denuded by charcoal production in a country where electricity supplies reach only six percent of a 12 million population.

The deadliest flood disaster (**Table 2-3**) was the March 1991 disaster near Phalombe in southern Malawi when approximately 500 people lost their lives. According to the NPoD list, 8041 people were rendered homeless and 128,140 people were affected in one way or another. It is significant to observe that the flash flood that caused such great mortality is, by some accounts, the consequence of the breaching of a temporary dam that resulted from a major landslide across the river drainage channel.

Table 2-3	Ten most deadly	disasters i	n Malawi (f	from NDMP	and NPoD	sources)
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Rank	Disaster	Number Killed	Date
1	Cholera (epidemic)	981	Oct 2001-Apr 2002
2	Cholera (epidemic)	648	1999
3	Cholera (epidemic)	524	1993
4	Flood / Landslide	500	1991
5	Cholera (epidemic)	497	1989/1990
6	Measles (epidemic)	> 63	Feb-Jul 1987
7	Cholera (epidemic)	55	Oct 2006-May 2007
8	Bus Accident	23	2000
9	Cyclone / Flood	21	1978
10	Train/Bus Accident	18	May 1998

### 2.3.2 <u>Severe local storms and Mwera winds</u>

The NPoD list contains many entries for storms under various designations, e.g., "wind storm", "strong winds", "heavy winds", "heavy rains and winds", "rainstorm", "hailstorm", etc. This lack of consistency in reporting style makes it very difficult to obtain a coherent analysis of these events, or to compare the record with the CRED and GLIDE disaster databases.

A severe storm disaster (lightning strike) is recorded in December 2005 under the category "Other" in the GLIDE database (**Appendix B**, Table 6; OT-2005-000212-MWI). The Mwera winds (strong southeasterlies caused by large anticyclones off the east coast of Africa) give rise to wave action that is noted as a significant lake hazard to small and large vessels (DoPDMA, 2004, Section 2.3). It is not clear if the lake disaster in May 2002 (**Appendix B**, Table 6; AC-2002-000319-MWI) was related to this phenomenon.

## 2.3.3 Drought

About 6.3 million (52.4 %) Malawians live below the poverty line (NSO, 2005), the majority in rural areas, with more than 90% relying on rain-fed subsistence farming for their livelihood. The occurrence of drought disaster is therefore especially damaging to this sector of the population. Evidence strongly suggests that increased droughts, interspersed with floods, may be exacerbating poverty levels, leaving many rural farmers trapped in a cycle of poverty and vulnerability (ActionAid, 2006). Global warming further compounds the situation in Malawi (see **Figure 2-2**), with the potential for future drastic increases in hunger and food insecurity.

The NPoD lists the 2001-2003 "food crisis" as affecting over 3 million people throughout the country, but otherwise contains no precise detail of the impacts. In noting that it was caused by "erratic rains in the 2001-2002 crop season and floods", it appears that the NPoD entry is a conflation of several discrete disasters. The GLIDE database separately lists three disastrous floods between January 2001 and February 2002, in addition to the drought of February 2002 (**Appendix B**, Table 6). According to the CRED EM-DAT database, the February 2002 drought was deadliest in Malawi with ~500 fatalities reported (**Appendix B**, Table 4). The impact of this event however was made worse and compounded by a combination of political, perception, institutional as well as household socio-economic factors that are discussed further in Section 3 where the response to the disaster is presented in a case study. The case study illustrates well, the maxim that disasters can be man-made and similarly can be averted.

### 2.3.4 Heatwave and wildfire

There are no recorded disasters of this kind in existing databases, but it is likely that unreported instances have occurred and that more can be expected in the future under the circumstances of global warming.

### 2.3.5 Impact of Floods and Droughts on Food Security

Since the focus of this study is on the hydro meteorological disasters impacting a population suffering from chronic poverty and food shortage, it is undoubtedly desirable to establish the cost of the impact of each flood or drought disaster that has occurred in the past as well as the cost of the response. The time taken to recover, and sustained impact (or otherwise) on the recipients of interventions made during response and the recovery/rehabilitation period should also be taken into account. The study by Benson and Mangani (2008) focused quite specifically on this aspect of Disaster Risk Management in Malawi and was unable to present data at this level of detail. Any economic insights obtained during this study are based on data presented by Benson et al, made available by various parties interviewed or found in the literature. It is beyond the scope of this study to undertake archive research or auditing of expenditure of the DoDMA, relevant line Ministries and key NGO or other actors.

Given that Maize production comprises up to 70% of the smallholder agricultural land, it is small wonder that the impact of the national scale droughts and extensive flooding are reflected in GDP trend and that it parallels the impact on maize production (see **Figure 2-3**). The GDP trend would implicitly include the cost of responding and recovering from these disasters and no alternative explanation for these dips in the GDP was found in the literature covered, without suggesting that such explanation may exist and be documented. Benson et al address the impact of data that is excluded from this "first order summary cost" of disasters and an indication of the costs of the impact of some disasters where this data is available from credible international data bases is shown in **Table 2-2** and **Table 2-3** above.



Figure 2-2 Trends of rainfall and temperature in Malawi

The financial information made available by the DoDMA is incomplete but is the best that could be obtained at present. The data illustrates that Best Practice in the Economic Analysis of the impact of disasters is a goal. If acted on it will likely result in appropriate and reliable assessment of impacts and needs at the time of the disaster. Well planned, thorough and methodical Monitoring and Evaluation of the response to disaster and any interventions is critical in achieving this goal. Achieving this will depend on good governance and financial management at village, traditional authority, district and national levels and on transparency in the budget processes of International Agencies and NGOs involved in Relief/Response, Recovery and Rehabilitation activities.

Events in 2001/2002 and 2007/2008 illustrate that these elements of Monitoring & Evaluation, cooperative governance, capacity and skills development, are not in place either at national or at district level. Furthermore, there was reluctance on the part of the different Line Ministries, International Agencies and NGOs to make the budgets related to activities that fall outside of immediate disaster relief/response activities available to this study. It is not easy to imagine how resources and activities can be prioritized and planned and the cost-benefit thereof evaluated without this information and without scale appropriate hazard and risk assessment.

The case study in the text box below illustrates the impacts of disasters on food security.

### Box 2-2 Impact of Floods and Droughts on Food Security

#### Impact of Floods and Droughts on Food Security

Figure 2-2 illustrates the impact of floods and/or drought on maize production, the country's main staple. The most severe drought was experienced during the 1991/92 cropping season and resulted in major food shortages in the country. As it can be noted in the graph, another major maize (food) shortage began in late 2001, followed by flooding in early 2002, which destroyed crops that had been planted, and caused further reductions in food availability and consumption (Phiri, 2004). As a result, the President of Malawi declared a 'State of Disaster' on February 27<sup>th</sup> 2002. It was reported that 78% of farm families (2.2 million people) were without food. Government estimated a shortfall of 600,000 MT of maize. Similarly, in February-March 2005, Malawi's rainy season was interrupted by a severe dry spell, with devastating effects on the production of maize, groundnuts, rice, beans and tobacco (CADECOM, 2006). The season was declared the worst in 10 years and a national cereal gap of 450,000 MT was estimated. The MVAC estimated that between 4.2 million and 4.6 million people would require food aid during the 05/06 consumption year, translating into a food aid requirement of around 272,000 MT.



## 2.4 Geological disasters

Malawi's setting within the great East African Rift System (EARS) is fundamental to an understanding of its considerable geological hazards, which are briefly summarized below (see **Appendix C** for a more detailed account).

### 2.4.1 Earthquake

The disastrous Salima event, which occurred on March 10, 1989 on the southeastern shore of Lake Malawi, is the largest in the instrumental record, and also the largest in historical memory within the national territory. However, there can be no complacency about the magnitude of the earthquake risk to the whole country. It is indeed probable that Malawi will experience earthquakes of much greater size in future, comparable to events that have occurred in neighboring Tanzania (Ms7.4 Rukwa event in 1910) and Mozambique (Mw7.0 Machaze event in 2006). Even larger, infrequent, major earthquakes in the size range Mw7.5-8 are necessary to balance the equations of seismic-moment conservation across the slow-moving (~2.5 to 3.5 mm/yr) Nubia-Rovuma plate boundary in Malawi. A realistic programme of earthquake preparedness for Malawi should not underestimate the potentially cataclysmic impact of such an event.

In the face of this looming natural hazard, there is an inevitable growth in the vulnerability to disaster and future great loss of life. Cursory observation in the Malawi urban environment reveals that there are many weak buildings and structures that will fail to withstand even moderate ground shaking. In the rural areas, the risk is also rapidly extending because there is "increasing shift from erection of traditional huts to that of unstable mud (or mdindo) and brick houses, which have poor foundation designs and poor mortar/brick combination" (DoPDMa, 2004, p. 79).

In addition to the highly destructive effects of ground shaking during a future strong to major Malawian earthquake, there are related or secondary hazards that are likely to compound the effects of this disaster. These include the obvious possibility of major landslides and less obviously an earthquake-induced tsunami or damaging seiche waves on Lake Malawi, which could be devastating to lakeshore settlements.

### 2.4.2 Landslide and ground instability

Due to its location along a tectonically active boundary between two major African plates, the process of bedrock landslides –whether geologically triggered by earthquake/earth tremor or hydrometeorologically triggered by heavy rain or both – is a major agent in landscape evolution. In the traditional wisdom of Malawi the longstanding and frequent occurrence of landslides is linked to the folklore of a subterranean serpent monster, Napolo, as illustrated by the following quotation (Magalasi, 2000, p.81):

"Up to the present day, Napolo is commonly known in Malawi as an underground mountain snake that causes landslides whenever it changes abode from a mountain to lower lands. Napolo's ability to cause landslides and avalanches is known by most Malawians, whether through experience or as a narrative. No-one really knows what this snake is. It is simply a myth through which Malawians try to understand the landslides that usually start in hills and mountains after heavy rains and then sweep everything away on the path to lower lands: an incident which traditional wisdom connects to the ancestors and the gods.

"The Napolo myth's link to rain, mountains, flooding, valleys, and the spirit world reveals a number of things. Landslide disasters pre-suppose a combination of higher and lower lands, and heavy rains. And this type of landscape and water, apart from any good that it might offer, presages danger for the living during rainy seasons. The heavy rains saturate mountain soil; some parts of the mountain give way, uprooting trees and rolling stones down to the valley. Napolo as a myth encompasses a combination of the destructive landslide-floods, mountains and hills, and heavy rain."

Thus a long-enduring prehistory of dramatic landslide disasters is expressed metaphorically through the Malawian folklore of Napolo, which has an obvious parallel in the Japanese folklore of Namazu, the earthquake-causing subterranean catfish, a well-known icon of earthquake folklore. In this folklore, a giant catfish lived in mud beneath the earth, restrained by Kashima, a god who protected the Japanese

people from earthquakes. While Kashima kept a mighty rock with magical powers over the catfish, the earth was still, but when he relaxed his guard the catfish thrashed about, causing earthquakes.

The snake-monster folklore of Napolo in Malawi could equally refer to earthquakes in this part of the EARS, since the most substantial and extensive landslide disasters in Malawian prehistory are likely to have been triggered by major (>M7) earthquakes along the rift-boundary faults. The usual association of landsliding with heavy rains in the Napolo folklore does not necessarily detract from this interpretation: Lake Malawi owes its origin to the rifting process, so there is likely to be a strong correlation between major earthquakes and the rainy season, because of stress and fluid-pressure fluctuations related to hydrologically modulated seasonal loading of the earth's crust. The Salima earthquake, which occurred in March 1989, is a case in point.

In many parts of the world, local folklore corresponds closely in some cases to geological evidence and geological events, and the symbolic language of myth and folklore can be a useful supplement to conventional geological evidence for constructing an accurate historical record of geological activity (Ludwin et al., 2007). At a deep, archetypical level, Malawi, Japan and many of the world's cultures appear to share similar themes in their conception of earthquakes.

Whether earthquake-triggered or not, landslides are a common phenomenon in parts of Malawi, and a number of historical landslides have been documented (Msilimba and Holmes, 2005). For example, the occurrence of landslides in the Rumphi district of northern Malawi, in the catchments of the Vunguvungu and Banga rivers, is associated with an area of deep, sandy soils overlying deeply weathered gneiss and schist, comparatively steep slopes, and a rainfall in excess of 1,500 mm per annum. Changing land use patterns, superimposed upon these geological and physiographic factors, have contributed to the landslide vulnerability of the area, in a unique combination of natural and human-induced factors (op. cit.).

### 2.4.3 Volcanic activity

During historical times, there has been no volcanic activity within or close to Malawi's borders. However, the Rungwe Volcanic Province straddles the Malawi-Tanzania border at the northern end of Lake Malawi, and is known for substantial activity in recent geological times. A latest Pleistocene eruption about 11 thousand years ago (Rungwe tuff) deposited volcanic ash 250 km to the northwest of the volcano in southern Lake Tanganyika. From the youngest sedimentary record in the northern part of Lake Malawi, there have been six eruptive episodes in the last 9000 years and a last eruption occurred around 360 years Before Present (B.P). Around the dormant Kiejo crater, there is evidence of a most recent, minor eruption in the late 1800's.

There has been increased earthquake activity in the Rungwe area since about mid-2000, causing substantial damage in a Tanzanian village and displacement of people in early 2001. Also there are (as yet anecdotal) reports of increases in CO<sup>2</sup> gas exhalations and of a marked rise in the temperatures of some hot springs. Therefore, there is a mounting concern that the Kiejo volcano in the Rungwe province may be in the preparatory stages of a new eruptive phase in the near future, one that is likely to be characterized by spectacularly explosive, ash-producing episodes.

Information on the last ~ 40 thousand years of Rungwe, eruptive history comes from the Massoko crater-lake, close to the Malawian border. The most recent explosive, ash-producing episode occurred at 1190 BP (760 AD), and there are 29 distinct volcanic ash horizons in the sedimentary record of the last 41 thousand years. Disregarding the temporal clustering, the average eruption-recurrence interval is 1414 years. If the current phenomena do indeed indicate the beginnings of an imminent volcanic resurgence, then its timing (~1200 years after the previous episode) is concordant with the recent geological record. Future resurgence of volcanism in this zone has the potential to cause extensive damage and disruption to the Chitipa and Karonga districts in northern Malawi.

## 2.5 Biological disasters

### 2.5.1 <u>Disease epidemics</u>

As reported in the NDMP document, the early 20th century disasters are mostly of the biological epidemic type (including influenza, measles, smallpox and meningitis; **Table 2-2**). The NPoD records 11 entries for a measles epidemic between March and June 1987, with a minimum of 63 reported deaths over a geographic area that is not easily interpreted from the place information, but there appears to be no reference to this episode in the NDMP. Following 1978 in the NDMP account, there is

a change in the character of the biological disasters, with the increasingly frequent occurrence of cholera (**Tables 2-2**), culminating in the Malawi's deadliest disaster of any kind between October 2001 and April 2002 (**Table 2-3**) when over 900 people died in the epidemic.

The pattern may not apply throughout the country. In Salima district, for example, the Chief Clinical Officer (Dr Ronald Phiri, 03/04/08)) reported that cholera has decreased in the last 3 – 4 years because of the increase in the number of health assistants in the field. The increase in personnel resulted in improved distribution of chlorine, and timely liaison between the Ministry of Health and UNICEF, which resulted in medical supplies being available. In a significant number of the other districts, however, it must have increased if the summary statistics (cf. **Table 2-2** above) are correct. To understand why, would require a detailed analysis but given adequate staffing, good coordination with and response by national and international counterparts, the incidence can be reduced. Since many of the cholera incidents seemingly relate to occurrence of flood and drought (i.e., cholera is a secondary or tertiary impact) it can be concluded that one of the causes in the increase is the undue time delays between the event (flood/onset of food insecurity, reduced access to clean water) and the Emergency Management response and coordination between the DoDMA and the MOH.

### 2.5.2 Invasive pests

A comprehensive account of pest hazards is provided in Chapter 4 of the National Disaster Management Plan for Malawi (DoPDMA, 2004). This document provides information on four pest disasters between 1987 and 1991, but none since that time (**Table 2-2**). The NPoD list contains 9 entries referring to the (same) armyworm plague in January 2005, which coincides with a dry spell (Jan-Feb 2005, that precipitated the June 2005 food crisis. However, it does not, document the 1987-1991 pest disasters recounted in the NDMP.

## 2.6 Technological disasters

Chapter 6 of the National Disaster Management Plan for Malawi (DoPDMA, 2004) defines "Social hazards" as encompassing "man-made activities and some natural events that can lead to massive suffering of people, destruction of the environment or infrastructure, economic devastation and social unrest". Included under this category are:

- Epidemics
- Road/rail accidents
- Refugees/displaced persons
- Economic and political hazards
- Civil strife
- Information and Communication technology
- Terrorism

As noted in Section 2.5 above, epidemics are now considered by international convention to fall under the classification of "Biological Hazards". All other aspects, including "destruction of the environment" are here considered to fall within the modern category of "Technological Hazards" (UN/ISDR, 2004).

### 2.6.1 Environmental Degradation

Environmental degradation is characteristically a slow-onset condition that develops over many years, and is here considered to represent a failure of human technology in sustainable co-existence with the natural environment. It is widely regarded as a significant contributory factor in recent flood disasters and also in landslide disasters. In terms of its expression in surface-water quality, its possible role in the apparent increase of cholera epidemics should not be under-estimated.

The relationship between environmental and human resilience is appreciated but not quantified. This process is already evident in the southern region of Malawi where the complex relationship between environmental degradation in the headwaters of the Lower Shire and its tributaries contributes to the intensity, frequency and impact of the floods. The pace of change has been such that local knowledge of river flows and flood patterns has not kept pace nor been able to predict river behavior reliably. This has reduced the coping capacities of communities that formerly successfully practiced agriculture on the flood plains optimizing the fertile alluvial plains. As a result improper land use in an active sedimentary
environment further escalates degradation of the flood plain environment. As discussed above the environmental and geological process working at different spatial and temporal scales need to be understood in order to design effective DRR initiatives. (See **Appendix B**)

#### 2.6.2 Industrial Accidents

No disasters of this kind are listed for Malawi.

#### 2.6.3 Transportation Accidents

The GLIDE database lists three road-transport accidents and one lake accident in this disaster category (cf. **Appendix B**).

## 2.6.4 Social Unrest, Terrorism and Civil Strife

The Mozambique refugee crisis of 1987-1992 and the strike action of 1992 (**Table 2-2**) are found within this category. There are refugees arriving in Karonga and the possibility of more arriving from Zimbabwe in the southwest.

# 3 Overview of current DRR in Malawi

The overarching international frame of reference for situation analysis and input to policy and strategy of Disaster Management (DM) and Risk Reduction (DRR) is the Hyogo Framework of Action (HFA) (UN/ISDR 2005). The stated purpose or expected outcome of Disaster Risk Management (DRM) is the substantial reduction in losses, in lives and in the social economic and environmental assets of communities and countries. DRM is the preferred term in this report because it includes the elements of both DRR and DM. It is largely accepted that the implementation of the HFA will support progress towards realizing the Millennium Development Goals (MDGs) and that adaptation to Climate Change is a hazard-specific disaster risk reduction activity, most elements of which can be considered using the HFA, and more specifically HFA Priorities for Action 2, 3 & 4.

There are three key strategic goals to work towards in the course of implementing the HFA. These are:

- 1. The integration of DRR into sustainable development policies and planning;
- 2. The development and strengthening of institutions, mechanisms and capacities to build resilience to hazards; and
- 3. The systematic incorporation of Risk Reduction approaches into the implementation of emergency preparedness, response and recovery programmes.

For convenience and easy reference, the Priorities for Action detailed in the HFA are contained in **Appendix D**.

The HFA provides a common frame of reference for coordination and debate between key stakeholders in Malawi. It can also facilitate integration of international best practice into the debate. The strategies and focus of donors and international NGOs in Malawi are informed by the HFA and related global trends adapted to local realities as far as possible. (e.g., all members of the MVAC collect data at enumeration area (ea) level for their own purpose and make it available to the MVAC; but they collect the data needed to meet their agency's own priorities, not necessarily those that comply with DoDMA requirements or standards).

All information detailed in the following sections is based on information obtained in various GoM documents, the literature, and during interviews conducted in two parts (one week early February 2008, and two weeks in April 2008). The Department of Disaster Management Affairs (DoDMA) advised on parties to be interviewed. Where possible, information obtained in interviews was confirmed in available documentation. The list of persons interviewed is contained in **Appendix E**.

Data is presented in tables below and in Annexure A3, followed by more detailed discussion in Sections 3.2 and 3.3 below. As far as possible, the contributions (roles and responsibilities) that different parties make are summarized in table format. It is not realistic in this study to formally evaluate how effectively these numerous and various personnel are, or are not, meeting the stated goals of their interventions or the needs on the ground. The purpose of this section is to present a *preliminary* overview or mind map of the different players, a summary of their stated intentions and to make comment on key elements of the emerging pattern that would influence policy and strategy development for the DoDMA. There are a number of committees on which different parties sit; often more than one. These committees have a particular focus and are tabled with Government line ministries.

Roles and responsibilities of the GoM, Donor, NGO and FBO actors are presented in Section 3.1. The GoM Strategies and Policies that inform the DRM Situation Analysis in Malawi are detailed in Section 3.2. These are referred to in support of the Situation Analysis (SA) in Section 3.3 as they pertain to the objectives of the first and second Strategic Goal of the HFA with special reference to the activities detailed under HFA 1 & 2. Reference is also made in Section 3.3 to the information tabled in Section 3.1 when assessing the DRR elements of the third Strategic Goal of the HFA that are addressed in the activities of the HFA 2, 3,4 & 5. The information contained in the case studies presented in Section 2 and in Section 3 of this report are cross-referenced to specifically support the SA of DRM in Malawi generally and more specifically the DM element of the third Strategic Goal and HFA 5.

Some data gaps remain and not all relevant personnel were interviewed. Where up to date information is available on the web for people not interviewed but known to have a presence in Malawi this is noted in the tables. (See **Annexure A**) Further information was contributed after a workshop attended by various stakeholders. Data gaps pertain to staffing and other resources e.g. budget and details of roles and responsibilities of different departments within line ministries. The complex structure of line ministries and departments in the GoM is difficult to map given the relatively frequent restructuring and

renaming of government departments in the past five to ten years and sometimes lack of clarity in the available documents. A list of Line Ministries names used in this report is contained in Table A.3.1 (Annexure A).

# 3.1 Stakeholders in Disaster Risk Management

The DRR stage in Malawi is populated with numerous players. It is beyond the scope of this study to prepare a *comprehensive* map of all people involved, activities and the time lines of different programmes and projects undertaken in the past 30 years as well as those active now. The overview below is considered adequate to evaluate the current disaster management situation in Malawi and make recommendations at the strategic and policy level. A detailed and comprehensive map would be necessary for detailed forward planning once the proposed Strategy/Policy and National Platform is in place.

The stakeholders are divided into three groups, viz., Government Line Ministries, Donor (UN Agencies, International Aid Organisations and in some cases International Non Governmental and Faith Based Organisations (NGOs and FBOs) and Civil Society (viz., NGOs and FBOs that receive funding from Donors and do not themselves independently raise funds for distribution). These groups are coordinated by the government agency responsible for Disaster Management in Malawi, i.e. the DoDMA, which reports to a committee known as the National Disaster Preparedness and Relief Committee (NDPRC). The structure of this committee is shown in Figure 3-1 below, as is the line of communication and the flow of data from the area of impact (Village) to the decision making body (OPC). A Desk Officer in each DA acts as the Disaster & Relief Officer in addition to his line function in the MoLG&RD being responsible for disaster impact and loss assessment and liaison with the DoDMA. The DoDMA has a relatively high profile in government and would be able to command the attention of the President and the cabinet depending upon the profile and prestige of the unit. A Secretary and Commissioner for Disaster Management Affairs at Principal Secretary (PS) grade level and located in the OPC, heads the DoDMA. The chair of the NDPRC is the Chief Secretary who reports to the President on behalf of the committee.

The relevant government departments and committees are listed in **Annexure A** and different personnel from the Donor, NGO and FBO sectors support and assist the government as defined by their participation on these committees. The graphic presented in **Figure 3.1** is based on information in the draft NDMP of 2004 and received from the DoDMA.

# 3.1.1 Government of Malawi – Involvement in DRM

There are a number of GoM ministries overtly involved in DRM in Malawi today. Six of these are worth mentioning here: (Ministry of Agriculture and Food Security (MoA&FS); the Ministry of Health and Population (MoH&P); the Ministry of Economic Planning and Development (MEPD); the Ministry of Education and Vocational Training (MoEVT); the Ministry of Water and Irrigation Development (MoWID) and the Ministry of Lands are more specifically involved in DRR activities focusing on food security, development, health and education. Certain Ministries whose strategies and policies and, in some instances activities, address different DRR aspects of the environment (resource management e.g. Forestry, Fishery, Mining/Land; Environment). Yet other ministries are more specifically involved in DM activities, actively participate on the NDPRC and during Relief, Recovery & Rehabilitation operations following a disaster.

See Table A.3.1 (**Annexure A**) for a summary of the roles and responsibilities of the line ministries in DRR and DM.



# Figure 3-1 Line of communication with respect to all DRM structures from village to cabinet level and the President.

The MEPD is primarily a service Ministry and is responsible (inter alia) for developing the Social Protection Policy (2008) that supplements the Malawi Growth and Development Strategy. This ministry is also responsible for monitoring Poverty Reduction programmes and projects, an important element of Food Security. Since much of the current DRM activity is at community level, the support of the MoLG&RD/District Assemblies is important. Planned decentralization of resources (skills & financial) to the districts and the relevant committees is evident in the responsibility assigned in the DoDMA structures of **Figure 3-1**. The MoEVT is a necessary player in any preparedness initiatives as are schools being central to many communities and being used as a gathering point for community activities and adult education. Religious centers such as churches should also be involved.

For historical reasons the government ministries of Health and Agriculture have developed DRR functionality with respect to food security and epidemics (diarrhoeal enteric) respectively from grass roots level up to national level. This arises primarily from the effective and straightforward approach adopted in previous years to address the three significant threats to Malawians' well being. These were identified as hunger, ignorance and disease, hence the focus on the Ministry of Agriculture as the key ministry to drive the economy and alleviate hunger, the Ministry of Education to build human resource skills and strengthening the Ministry of Health through various hospitals in urban as well as in the rural areas. This is also reflected in current trends in budgetary allocations to the three key sectors of the economy (**Table 3-1**). Combined they receive approximately 30% of the annual government budget.

	Major sector expenditures as % of total government expenditures			
	Agriculture	Health	Education	Infrastructure
1996/97	6.0	7.8	16.2	2.2
1997/98	5.8	7.5	18.5	4.9
1998/99	7.0	9.4	14.9	5.2
1999/00	8.8	8.5	14.6	10.8
2000/01	5.0	10.4	13.0	8.3
2001/02	6.9	11.6	13.2	6.6
2002/03	6.4	10.9	17.2	4.4
2003/04	6.6	13.8	14.5	6.0
2004/05	10.0	11.0	12.8	5.7

Table 3-1Expenditure trends by major sector in Malawi: 1992/93 to 2003/04.

Source: Mdyetseni 2005

The essential elements of the Disaster Risk Reduction approach were therefore implicitly factored into a developmental strategy during these years. The relevant line Ministries of Health and Agriculture developed strengths in terms of process and practice, institutional discipline and standards (memory of which remains), liaison and cooperation with counterparts in surrounding countries through SADC and COMESA. This was underpinned by a focus at tertiary level education on agriculture, primary health and public administration resulting in a pool of graduates to draw on for employment in the public sector. Graduates were supported and encouraged to study at home and abroad at post-graduate level in agriculture and other related fields.

Prior to 1991 when the NDPRC was established, there was no explicit Disaster Response Strategy nor was there emphasis on the need for coordination between sectors. Line ministries functioned mostly without liaison between each other. Currently tertiary education has little overt focus on disaster management except in agricultural or environmental related programmes and Primary Health Care that implicitly address some of DRM issues.

Since this study focused on disasters post 1992, the paragraphs above provide a historical perspective on the escalation in activity and increasing focus on a structured and coordinated approach to DRM that was initiated by the disasters of 1991 and has steadily progressed since then. As can be expected legislative, policy and institutional changes have been influenced by the pattern and impact of disasters, the changing economic and development demands in Malawi as well as international influences. This process is summarized in the text box below.

The current activities and involvement in DRR and DM related activities are listed in Table A.3.1 (**Annexure A**). Ministries and departments that may or may not be responsible for comparable aspects of government are tabled together. It is beyond the scope of this study to detail these roles and responsibilities further but such data and insight would be useful for coordination and optimization of resources (knowledge, staff, financial). In addition, the data would support a rational approach to funding, focus and selection of priority regions/districts/communities for DRM related activities identified at Theme and Sub Theme level in the MDGS the NAPA and the Social Protection Strategies and Policies.

## Box 3-1 Summary of major disasters and steady progress in DRM in Malawi

#### Major disasters and impacts in Malawi

Between 1989 and 1993 over 16 million people were impacted by natural disasters. The table below summarises the available data into people impacted and lives lost as well as costs arising from Relief and loss of property, goods and infrastructure. The 1991 flood is listed as the 4<sup>th</sup> largest disaster in Malawi over the past thirty years in terms of people killed.

Hazard	Date	People Impacted	Cost	Comment	
Earthquake	March 1989		\$28M		
Drought	February 1990	2.8 Million	Not assigned	May be included in cost given for Flood below but assumed not.	
	April 1992	7 Million	Not assigned		
Flood	March 1991	472 killed <180 000	\$24M	Cost inferred; data re people impacted not accessible.	

This unfortunate sequence of events motivated the passage of the Disaster Preparedness & Relief Act in 1991. Between 1994 and 1998 there were 6 disasters, all of hydro-meteorological origin viz. four floods and two droughts. During 1995, the National Disaster Management Plan for Malawi was initiated. Three million people were impacted in total, significantly less than nearly 10 million in the three years between 1990 and 1992. In February 1997 there was a flood that affected 400 000 people and is listed as the eighth largest disaster in terms of total number of victims.

In January 2001 a major flood killed 59 people and affected ~500 000 people. It was followed in February 2002 by the third biggest disaster (drought) in Malawi with 2.83 million affected. The WFP distributed food aid in every district. A flood in December 2002 affected nearly 250 000 people. The worst recorded epidemics happened during in 2001 and killed over 1100 people. Combined, these events resulted in the famine of 2001/2 the response to which has been analysed and lessons learned documented by numerous parties (Devereux, 2002, Phiri, 2004 inter alia). Between 2001 and 2005, Malawi was buffeted by a series of floods and droughts with significant cumulative impact. In 2004, the final draft of the National Disaster Management Plan for Malawi (NDMP) was prepared and this information will be used to develop the Disaster Risk Management Policy and the Disaster Operations Guidelines/Manual, a process that is currently underway and supported by the UNDP.

# 3.1.2 Key Donor Organisations

A number of international donor organisations operate in Malawi at different levels of support and aid (see Table A.3.2 in **Annexure A**). A summary of the UN and Donor Agencies working with Food Security in Malawi in 2003 is shown below in Figure 3-2. More up to date information was not easily obtainable. It is noted that the need to support medium to long-term change has been recognized and there has been a switch by the international agencies and organizations to a programmatic approach that lends itself to a more flexible process and provides opportunities to adapt approaches as needed.

**Figure 3-2** illustrates the UN involvement in the Food Crisis Joint Task Force established and functioned effectively during the years 2001 to 2005 to address the national scale Food Security issues. This organogram of the Malawi Food Crisis Joint Task Force illustrates the numerous groups involved in the decision over whether Food Aid must be distributed and where. It is a complex structure, depending upon the availability of different participants and could (as with the GoM structure) take time for parties to be able to meet, consider data, and information and reach agreement (see Case Study on the Joint Emergency Food Aid Programme under Section 3.3, Box 3-3).



Figure 3-2 Organogram of the Food Crisis Joint Task Force

Figure A.3.1 (see **Annexure A**) shows the spatial distribution of activities of <u>one</u> department in <u>one</u> of these agencies, viz. the WFP/Food Security, since 2002. The WFP makes a significant contribution to humanitarian assistance in Malawi and cooperates with other agencies more actively involved in addressing the root causes of FI such as the FAO and the MoA&FS inter alia. Other programmes address HIV/AIDS. The WFP partners with a number of organisations at district level to distribute food to communities. The WFP does not undertake actual distribution of food. Once it has sourced and transported food to the area of need, the distribution to recipients is handled by implementing partners mostly NGOs.

A database with detailed information for each and every stakeholder is required for effective management and coordination of resources.

# 3.1.3 Non-governmental Organizations

In addition to the international donor agencies listed above, a number of non-governmental organisations operate in Malawi, funded by a variety of sources. (See Table A.3.3 in **Annexure A**). A few of these organisations are operative throughout Malawi, others in one or more districts across the country. This is illustrated in Figure A.3.2a, b and c (**Annexure A**), showing where those NGOs that have partnered with the WFP in food aid distribution operate. These NGOs however do more than distribute food aid and operate in more districts or regions than are evident in the figure. In general however an NGO tends to develop knowledge of local conditions in one or more districts close to each other and build on that knowledge. The larger internationally based NGOs such as World Vision International, Action Aid and CADECOM (and other FBOs) are active in relatively larger areas. Some of these organizations also partner with smaller NGOs and CBOs in implementing their projects.

The Council for Non-Governmental Organizations of Malawi (CONGOMA) coordinates activities of NGOs in the country. It currently has a total membership of 296 NGOs. It aims at creating networks and collaboration among NGOs working on the same themes, to build capacity of member NGOs and conduct advocacy to lobby on behalf of NGOs on various challenges that they face. CONGOMA was established in 1992, replacing the Council for Social Welfare Services in Malawi (CSWSM) in place since 1985. A preliminary list of NGO stakeholders is shown in Table A.3.3 (**Annexure A**) summarizing their area of involvement in DRM.

A number of local NGOs have grown in response to a specific need that persists at district level. For example, CURE grew out of the impact on the environment arising from the influx of refugees from Mozambique into the southern districts (most particularly Nsanje) between 1987 and 1992. It has subsequently developed to provide a coordination and environmental-information resource service (inter alia) to other NGOs, but can no longer easily attract international funding because current emphasis is on funding initiatives related to climate change.

An example of Best Practice in cooperation, coordination of resources and addressing the complex interplay of different social, economic and other factors underlying community vulnerability is illustrated in the text box below. It is furthermore an example of the advantage of local knowledge and locally based NGOs cooperating between themselves and negotiating the necessary support of international stakeholders in terms of finance and expertise.

### Box 3-2 Best Practice in DRM

#### **Best Practice in DRM**

The Malawi Church Food Security and DRR Consortium are implementing a disaster risk reduction project in six disaster-prone areas of Malawi. The Consortium has five partners viz. The River of Life Evangelical Church in Nsanje, the EAGLES Relief of the Living Waters Church in Chikwawa, Emmanuel International in Machinga, the Assemblies of God in Mchinji and the CCAP Livingstonia Synod in Mzimba. The project is coordinated through the Evangelical Association of Malawi. The Malawi community-based Disaster Risk Reduction project had been underway for two years at the end of March 2008. The project has seen significant community transformation with evidence of DRR at community level. Between October 2007 and March 2008, Malawi experienced incessant rains and floods in different parts of the country. As a result of the mitigation and preparedness work, undertaken during the project, those communities involved were not significantly negatively impacted by the floods. These communities have enough food to take them through to the next harvest, which was not the case two years ago. During this period, communities, with help from partners, continued to take the leading role in project implementation with increasing levels of participation; a factor considered key to sustainability.

The project is funded through the Tear Fund/DFID and is targeting 23,300 households in the six districts. The main components of the project are the following:

- Capacity building initiative for the community structures in order to ensure that the community is well
  informed on issues pertaining to Disaster Risk Reduction. Some of the structures that have received
  training are Area Civil Protection Committees (ACPC), the Village Civil Protection Committee (VCPC)
  and community-based organizations (CBOs). (HFA 5)
- Partners at district assembly level have undertaken district-wide DRR mainstreaming initiatives and the district assembly officials are putting mechanisms in place to track DRR mainstreaming at district level. DRR initiatives have also taken root in schools: To date over 40 primary schools have taken part in DRR initiatives through sport, pupil-to-pupil dialogue, tree planting and also climate change and adaptation awareness. (<u>HFA 4</u>)
- Advocacy to influence and contribute to policy development both at community and national level, the
  continued establishment of strategic alliances and networking with other stakeholders in DRR and
  climate change and adaptation. This is carried out at three levels: Community level to ensure that
  communities share best practices; government level so that a DRR policy is developed as soon as
  possible and at donor level so that they release funds for addressing the underlying causes of disasters
  and do not focus on relief alone. (HFA 1&3)
- Livelihoods which include: Small-scale irrigation; water harvesting activities; introduction of droughttolerant crops; crop diversification; assistance in recovery from disasters through the introduction of small stock managed on a pass-on arrangement; mitigation infrastructure development (dredging rivers, realigning rivers into their original courses, and building of dykes); forestation – both fruit and forest and planting vetivar grass; building canals; use of energy-saving stoves and finally promotion of conservation farming. (HFA 4)

## 3.1.4 Summary of Roles and Responsibilities

The **Table 3-2** below summarizes the roles and responsibilities the key stakeholders play in different HFA priority areas of action. Information in **Box 3-2** is based on the case studies of DM presented in Section 2 and summarizes the challenges of coordination and cooperation between different stakeholders. It identifies factors that contributed to the successful optimization of resources during the 2001/2002 and 2004/2005 disasters. It does not detail the different actions of specific players as these are summarized in **Annexure A** and can be referred back to if verification of the analysis is required.

Programmes and interventions that relate to flood, drought and food security are merged in **Table 3-2** since the hazards of flood and drought and vulnerabilities arising from Food Security issues are so much intertwined together with environmental degradation, that there is not at this stage merit in separating them. Health related interventions are separate although many organizations consider HIV/AIDS, Nutrition and Food Security as interrelated. Details of the national strategies, themes and focus of activity of the GoM and various actors in Malawi have also been used to decide on content of the table. As before, the table is based on information obtained in interviews, web sites of various NGOs, UN Agencies and documentation. Where web sites are not up to date, data and information is per force not up to date. The team relied on those parties interviewed making all information available and/or directing where to source such information if that which is published or on the internet is out of date.

An example of how much detail will be needed for area specific coordination and possibly national prioritization of activities and funds at district level is illustrated by viewing the detail of activities of only one division for the WFP. As mentioned above the WFP distributes food relief and participates in monitoring for indicators of food shortage regardless of the possible cause of food shortages. It is evident that a comprehensive relational and spatial database would greatly assist the DoDMA to coordinate financial, human and material resources at national level and to support the same at district and community level, thereby avoiding duplication of effort. This will also facilitate defining measurable outcomes expected from interventions and the monitoring and evaluation thereof.

The UN Agencies are hazard specific in a sense e.g. WHO are involved in Early Warning Systems for Biological related hazards and the WHO also participates and supports various HFA 4 related interventions, FAO (Agricultural Practice, FS), UNEP (Environment, Biodiversity) and so forth. Generally the NGO and FBO interventions relate specifically to DRR or DM activities without specific reference to any particular hazard driven by a Rights Based Approach (RBA) with an emphasis on Poverty Reduction, Education and Health (e.g. ActionAID, World Vision). Others are more specifically involved in Education and Capacity building to reduce the levels of Food Insecurity and increase opportunities for children to attend school. A few (e.g. CADECOM) are initiating Training of Trainers approaches with particular reference to Hazard Identification and Risk Assessment using Participatory Rural Approaches at community level. In general these activities can largely be classed as undertaking HFA 4 related activities relevant to reducing vulnerability in the Malawian context of chronic food insecurity, limited assets and income and increasing poverty of the majority of the population. Some agencies do work specifically with HIV/AIDS, General Health (children and maternity), Malaria, and Nutrition. Thus some are classified as being specific to Biological Hazards and others are considered as general mitigation (HFA 4) activities under Food Security that is classified together with Floods and Droughts, because famine and food shortage is the primary disaster impact arising from these hazards along with displacement of people as a result of floods.

However, the Center for Environmental Policy Analysis (CEPA) one of the local NGOs involved with environmental issues is addressing policy in the arena of Sustainable Environment Resource Management and interestingly also undertakes commissioned research. Another, CURE, has grown to become an environmental resource center. It appears that the formal professional service/consulting industry is in the early growth stages in Malawi but must as yet work in the guise of an NGO to be sustainable while confidence in delivery and quality develops in the market.

Further analysis using the HFA as a common reference against which to map DRM activities in Malawi is contained in Section 3.3. Reference is made in this section to the case studies in Section 2 and to the information in the Tables A.3.1 - A.3.3 where appropriate.

The text box below details the lessons learned during the 2001/2005 sequence of disasters and identifies elements of Best Practice and Actions subsequently taken by the GoM in collaboration with its development partners to improve DM and to initiate DRR activities.

## Box 3-3 Lessons learned from the Joint Emergency Food Aid Programme

#### The Joint Emergency Food Aid Programme

The Joint Emergency Food Aid Programme (JEFAP) is one of the institutional legacies of the 2001-2002 Food Crisis. The JEFAP was the principal food aid component of the 2002-2003 humanitarian response to the drought and associated food insecurity that hit most parts of the country. JEFAP was formed as a collaboration of the Government of Malawi, the donor organizations, the World Food Programme and the Non-Governmental Organizations' (NGOs) Consortium. The objective of the JEFAP was to source and coordinate the distribution of relief food items to the most vulnerable and food insecure households in Malawi in a spirit of transparency and accountability. The institutional set-up of JEFAP and the lessons learnt from its 2002-2003 humanitarian response still remain valid today and in the future with regards to ensuring effective disaster response initiatives in the country.

Considering the situation of the population and following the President's declaration of the state of disaster in February 2002, the Government of Malawi, through the National Disaster Preparedness and Relief Committee, proposed to launch an institutional arrangement comprising of the National Food Crisis Task Force (FCJTF) (see **Figure 3-3**) to address food crisis and medium and long-term food security issues. Six sub-committees were created, each with very specific terms of reference under this national task force. These included: Humanitarian Response Subcommittee; Information Systems Subcommittee; Food Security and Nutrition Subcommittee; Commercial Maize Subcommittee and the Imports and Logistics Subcommittee. In order for the FCJTF to fulfill its role and achieve meaningful and valuable results during the crisis, a decision was made to establish a Technical Secretariat, which would act as the technical instrument of the Government, with the goal of facilitating the task force's work. The sub-committees were hence coordinated through the Technical Secretariat headed by an International Food Security Advisor. JEFAP was the operational arm of the Food Crisis Joint Task Force through the Humanitarian Response Subcommittee.

Several factors are important to the Technical Secretariat's success in ensuring effective coordination and functioning of the subcommittees (Phiri, 2004). Firstly, it was felt that the Technical Secretariat was well placed in the Ministry of Agriculture and Food Security to coordinate the food crisis. Secondly, it was pointed out that the Technical Secretariat fulfilled its role through effective organization of meetings, responding to requests and providing information where possible including quick preparation and dissemination of minutes. This ensured effective decision making by all players in the Task Force. Thirdly, members of subcommittees reported that the Technical Secretariat played a neutral role as far as activities of subcommittees were concerned, and therefore served its role very well. Lastly, as a coordinating unit, the Technical Secretariat served as a reservoir for a considerable amount of useful information that was collected during the crisis.

Although much of the initial structure has remained the same, a few changes have taken place since 2003. The evaluation of the Food Crisis Joint Task Force recommended that the Strategic Grain Reserves and the Commercial Maize Subcommittees be maintained but should be merged because they focus on related issues. The Food Crisis Joint Task Force has been transformed into a positive looking Food and Nutrition Security Joint Task Force. It was pointed out during the current study that when there is a crisis, all the various subcommittees are active but most of them go dormant when there is no crisis. It appears to be a big challenge to persuade people to keep these structures active in the absence of a crisis. When there is enough food at national level, the government appears to be unwilling to convene meetings to discuss pockets of food shortages in the country. This leads to a slowing down of the whole structure. One is compelled however to recommend that such an effective structure should remain active even in times of prosperity to avoid being taken by surprise. This is the time to discuss contingency measures particularly as the rainy season approaches, as this is when most disasters occur.



# Figure 3-3 Organizational Chart of the Joint Task Force Structure; after Phiri (2004)

# Table 3-2 Roles and Responsibilities of Key Institutions (Government, Donor and larger NGO) in Disaster Risk Management

(Please see Annexure A3 for details of activities of different agencies listed in this summary table)

Roles & Responsibilities	Government of Malawi, UN Agencies & Donors, NGOs					
	Secretary and Commissioner for Disaster Management Affairs (Co-ordination)					
	Hydro meteorological & Complex			Geophysical	Biological	
	Floods	Droughts (Pests)	Food Security	Earth Quakes & Landslides	Disease	
<u>HFA 1</u> Ensure that DRR is a national and local priority with a strong institutional basis for implementation	DoDMA; MoA&FS (Meteorology) (Crop Production); MEPD; MoMNR&E MoLG&RD CEPA; Lilongwe Diocese Catholic Health Commission; WB;AfDB;UNDP; UNICEF; FAO; USAID; WWF		MoMNR&E MoLG&RD	<u>MoMNR&amp;E</u> Geological Survey	<u>MOH &amp; OPC/NHA</u> UNICEF;USG;(HIV/AIDS);	
HFA 2 Identify Assess Monitor disaster risks and enhance early warning	DoMS; DA; MoA&FS (Meteorology) (Crop Production); MEPD; MOH/NHA, MoIWD (Floods) CADECOM; ActionAID; MVAC/FEWSNET (Malnutrition/Food Shortage) FAO; WFP;UNDP; WB;		<u>MoMNR&amp;E</u> Geological Survey <u>Limited</u>	NHA; Community Health Programme		
<u>HFA 3</u> Use Knowledge innovation <u>education</u> to build a culture of Safety & resilience at all levels	DoDMA; DA; MoA&FS MoMNR&E(EAD); MEVT/MoETD; MoH&P ; AfDB; FAO; WFP; ActionAid; CADECOM; WVI;CADECOM;UNDP; WB; AfDB; USAID; CURE		Limited	NHA;UNICEF(Nutrition&Choler a programmes); USG (HIV/AIDS); WB&JICA (Community Health Science Unit); GOAL		
HFA 4 Reduce the underlying Risks	DoDMA; DA; MoA&FS MoMNR (EAD); MEPD; MoLG&RD MoH&P/NHA; MoIWD; AfDB; UNDP; UNICEF; WFP; FAO; ActionAID; ADRA; CCAP – Livingstonia Synod; CADECOM; CARD; CARE; CCAP; Concern Universal; CRS; CURE; EAM; ELDS; Emmanuel International; Dan Church Aid; GOAL; MRC; OXFAM; Plan Int; Salvation Army; WVI; WWF; UNICEF; UNHCR; USAID; EC/EU; JICA		None	MoH/NHA; WHO; UNICEF/MoWCD (Stop Child Abuse Nutrition/Hygiene & Sanitation); USG (HIV/AIDS); USAID (HIV/AIDS,Malaria);CIDA (Nutrition/HIVAIDS/Hygiene & Sanitation); ELDS(HIV/AIDS); GOAL (HIV/AIDS);CRS; WVI;		
HFA 5 Strengthen Disaster Preparedness for effective response at all levels	OPC; MoF, NDCPR; DoDMA; D Africare; CADECOM;CARE; Co Army; COOP/MALEZA; ELDS; WFP; WB; FAO;UNICEF; DIFD	A; ADMARC; NFRA; MoD/MD oncern Universal; CPAR; CRS Salvation Army	F; MoTPW ;CURE; GOAL;Salvation	None	MOH/NHA	

# 3.2 Disaster Risk Reduction Policies, Programmes and Practices

The various items of legislation, strategy, policy or Framework(s) of Action of the relevant GoM line ministries inform the activities of all players. The specific focus of the Donor, NGO and FBO community programmes are informed by their own organizations individual agendas as adapted to the Malawian context and as driven by agendas of key funding sources. Thus the policy landscape to support DRM in Malawi is both diverse and complex.

A summary of the GoM strategy and policy landscape is summarized below and detailed in Table A.3.4 (**Annexure A**). A factor seldom considered is that of the different timelines and drivers governing the various organizations from a strategic, policy and fund cycle perspective. This aspect impacts on the complexity and challenge of coordination of resources, implementation, definition of programme/project deliverables and the monitoring and evaluation of sustained outcomes. Further discussion on this particular element is in Section 3.3.

The GoM Parliament passed the Disaster Preparedness and Relief Act of 1991 to make provisions for the coordination and implementation of measures to alleviate effects of disasters. It includes the establishment of a National Disaster Preparedness and Relief Fund and national committee. The National Disaster Management Plan for Malawi (NDMPM) prepared in 2004 and subsequently updated, although not yet finalized, interfaces with the overarching strategy to realize the Millennium Development Goals (MDGs) in Malawi.

This strategy is known as the Malawi Growth and Development Strategy (2006) and an annual review is undertaken of progress in realizing these goals. This document and relevant government department documents (laws, strategies, policies, frameworks for action) that also support achievement of the MDGs in Malawi, the Malawi National Adaptation Programmes of Action (NAPA) (2006), the Social Protection Policy and various regional programmes and international human rights and environmental conventions signed by Malawi inform and impact on DRR activities.

DRM is listed as sub-theme 2 in **Theme 2** of the Malawi Growth and Development Strategy (MGDS) (2006) viz. **Social Protection and Disaster Risk Management**. The first sub theme in Social Protection is "Protecting the Vulnerable". Health, Nutrition, HIV/AIDS, Education and Gender issues are addressed under **Theme 3**, **Social Development** while **Food Security** and **Economic Empowerment** (Sub themes 3 and 5 respectively) fall under **Theme 1** of **Sustainable Economic Growth**. Also contained in the first theme are Environmental related (in Sub theme 1) and Land (Sub theme 6) Issues. Any departments associated with implementing the MDGs and the Social Protection Policy will in one way or another be contributing to DRR and will need to be involved in the event of a coherent and sustained programmatic approach to DRM. However little can be achieved without **Theme 4** Infrastructure (especially sub-Theme 2 **Water & Sanitation**/cholera and sub Theme 4 **ICT**/Early Warning & preparedness) and **Theme 5** Governance (esp. Sub-Theme 2 **Public Sector Management** viz. Political Will and Mindset (i.e. fulfillment of plans/policies in place) and sub-Theme 3; **Decentralization**. Corruption in the MDGs is detailed as per prosecution. It can be addressed as a component of Political Will and Mindset in order to build up effectiveness, competency and professional pride in the public sector work place.

It is clear that addressing the sub themes of Food Security, Social Protection, Disaster Risk Management, Education, Gender and Good Governance as documented in the MGDS are key to achieve the stated international MDGs in Malawi. There is appreciation of all these issues except that of Gender, a key aspect of the international MDGs and a cross cutting issue in the HFA (see **Appendix F** for details of the MDGs).

The issue of Gender (as pertaining to both men and women), environmental degradation and land issues are related. It is appreciated that Gender is a delicate matter whose impact varies depending upon cultural practice. Vulnerability in Malawi does have a gender imprint. This has been summarized by Devereux et al (2006) and is tabled below. Consideration of the information in the text box below warrants reflecting upon by all stakeholders in the context of the prevalence of HIV/AIDS (55% of sufferers are women). Thought should also be given to the variation in prevalence in different districts and relationship to agricultural and cultural practices and the success or otherwise of poverty reduction initiatives that did or did not include coordination with HIV/AIDS interventions. Given that the issue of food security involves the availability of food as well as the availability of disposable cash or other assets, these gender vulnerabilities are critical to realizing the MDG1, 2, 3, 4, 5, 6, and 7.

More recently the NAPA has been completed which is also designed to support the MDGs and contains a DRR element. The Ministry of Mines Natural Resources and the Environment (MoMNR&E) with the Environmental Affairs Department (EAD) is responsible for implementing the NAPA.

#### Box 3-4 Gender Vulnerability in Malawi

Gen	Gender Vulnerability in Malawi		
1	Women comprise 70% of the agricultural labor force, but they are less likely to engage in cash crop production due to labor and time constraints;		
2	The value of assets owned by male-headed households is more than double that of female-headed households are more likely to own agricultural assets;		
3	Women's rates of pay for ganyu is likely to be only two-thirds the rate paid to men;		
4	Women face more difficulties in accessing credit, as they do not possess assets for collateral;		
5	In 2006, 56 per cent of women were literate compared with 79 per cent of men;		
6	Only 43 per cent of births are attended by health workers leading to high maternal mortality;		
7	As household assets are depleted women are more likely to engage in sexual transactions and other such risky behaviors to meet household subsistence needs;		
8	Women and girls typically take on the burden of caring for sick family members;		
9	Young girls are more likely to be withdrawn from school to care for younger siblings or the sick and to assist with domestic and agricultural work following a livelihood shock to the household;		
10	Female-headed households are more dependent than male headed households on external support for their subsistence – gifts of food from relatives, food aid and public works programmes;		
11	Women are rarely represented on the council of elders, and so are unable to influence decisions over access to land, inheritance rights and so on.		

The correlation between the NAPA, the HFA Priority Areas of Action and the international MDG (see **Table 3-3**) illustrates the relationship between good practice in DRM, Malawi's NAPA and the Social Protection Policy of Malawi. So far as possible, the indicators used to monitor progress in realizing the MGDs could be used as a basis for discussing a more systematic, methodical approach to co-ordinate, monitor, evaluate and assess outcomes of DRM activities by different actors. There is adequate documented evidence to confirm that integration of DRM principles into developmental projects is necessary to reduce the risk of disasters in the future and to support effective Disaster Response.

# Table 3-3HFA Priority Areas of Action and Millennium Development Goals addressed in the<br/>NAPA Priority Activities

NAPA Priority Activity	HFA Priority Area of Action	Millennium Development Goals
A. Improving community resilience to climate change through the development of sustainable rural livelihoods	HFA 4 Lesser Extent HFA 3	MDG 1
B. Restoring forests in the Upper, Middle and Lower Shire Valleys catchments to reduce siltation and the associated water flow problems	HFA 4	MDG 7
C. Improving agricultural production under erratic rains and changing climatic conditions	HFA 4	MDG 1
D. Improving Malawi's preparedness to cope with droughts and floods	HFA 1, 2, 4 and 5	MDG 1
E. Improving climate monitoring to enhance Malawi's early warning capability and decision making and sustainable utilization of Lake Malawi and lakeshore areas resources	HFA 2, 4	MDG 7

The different international and national strategies and policies are mapped against each other (see Table A.3.4 in **Annexure A**) to assist in understanding the linkages between different actors who are responsible for implementation, the potential to coordinate and optimize funding to realize common purpose. What is not documented and would be required to ensure that efforts build on previous results and are not duplicated by different teams, are the details of which districts, communities or villages have

been prioritized. In addition, the expected outcomes, evaluation of proposed activities with respect to best practice and in the context of previous interventions and outcomes, what specific elements of HFA 3 and 4 are being addressed and, how these are supported by other interventions within the relevant context and or spatial unit. This would be undertaken more easily using a GIS and relational database.

Given the very complex DRM landscape in Malawi, the five priority areas for action identified in the HFA provide a useful and necessary tool for mapping and rationalizing the roles and responsibility of the different actors in this field. The HFA can support identifying the factors and critical gaps that could be inhibiting effective DRR and DM and sustained positive impact of these interventions; a fact that is noted in numerous texts and statistics viz. declining income levels, increasing food insecurity; increasing population density in a vulnerable environment amongst others. For example, it is noted that HFA 2 and HFA 3 are not well developed in the NAPA and would be necessary for sustained adaptation to climate change. The HFA can also support planning and coordination of the activities of different agencies as per their own particular agenda. By way of example, the distinction between HFA 3 which is designed to build, support, improve, grow and maintain resilience in the next generation and HFA 4 which (other than sustainable environmental resource use) primarily supports development of coping capacities in the present context and generation, is very useful. It is clear that intervention designed to support HFA 3 outcomes will require a programme of sustained and maintained activity involving children of all ages throughout their education and early adulthood as well as investing in current leaders. In contrast HFA 4 interventions often require specific grassroots interventions amongst the community institutions and committees as well as household heads (variably urgent depending upon the risks faced and area specific vulnerabilities/coping capacities). In addition, focused advocacy at all levels of government is essential to support and coordinate the approach whilst also appropriately interfacing in any particular area with the activities under HFA 3 in education.

The spatial scale selected for any intervention and the duration of the intervention is important especially with regard to improving food security, land use and resource management and hazard specific mitigation and preparedness. Consideration of these aspects in planning and designing DRR interventions would facilitate integration of the overarching strategies, policies and programmes being run by different line ministries (planned or already in place) into any future national DRR programme roll-out, thereby supporting coordination between line ministries and with the DoDMA. For example, it is necessary to consider the multiple influences pertaining to any one identified hazard (e.g. flooding or environmental degradation) and to include considerations of any differences between how risk is perceived by the household, the community, leaders and government at different levels. Hazard Identification and Risk Assessment is an outcome of HFA 2 activities and will inform content of HFA 3 and HFA 4 interventions. Any differences in actual or perceived risk at community level or between community and national level, needs to be urgently addressed under HFA 4 activities and the necessary long to medium term education needed to support and Early Warning System put in place under HFA 2 and 3 activities.

# 3.3 Strength, Challenges, Constraints and Opportunities in DRM

The GoM is responsible for building an enabling environment, in which the key stakeholders can effectively contribute their financial resources and skills, to realize the "substantial reduction of disaster losses in the lives, and in the social, economic and environmental assets of the communities, [household and individuals]" (UN/ISDR, 2005). The strengths, challenges and constraints in current DRM protocols and practice are summarized in the context of what would be required to build such an environment and to implement the HFA effectively.

The challenge for the DoDMA to rationalize and co-ordinate all DRM and more specifically DM related interventions, initiated at different times in partnership with numerous local players is, by any measure, a daunting task. This is evident from the large number of people participating in different programmes (see Section 3.1) driven by different national and international strategies and priorities as well as the numerous intersecting strategies and policies of the GoM containing a DRM element (Section 3.2). There is however a common overall purpose to ease the conditions of Malawian people and to put in place measures that not only relieve the present chronic conditions of poverty, hunger and vulnerability to small scale and significant disasters but, also support recovery and development of resilience and resistance to disaster in the medium to long term.

As the World Food Programme (WFP) states; "it is important that, after the conclusion of these projects, people can secure food through their own efforts". Emphasis is placed on increased resilience to the

impact of disaster as the primary desired outcome (HFA 3&4), improved DM is a second (HFA 2 & 5) and reduction in the number and frequency of disasters is another (HFA 2, 3, 4 & 5).

This accords with the third Strategic Goal of the HFA. The first goal is to integrate DRR into sustainable development policies and planning which is planning for the future. Without effective and timely DM it is not possible to build resilience through development as small gains are quickly eroded in subsequent low impact events. Thus the second goal, the development and strengthening of institutions, mechanisms and capacities to build resilience to hazards are fundamental to all DRR. The third goal is the systematic incorporation of Risk Reduction approaches into the implementation of emergency preparedness, response and recovery programmes. The strengths, challenges and constraints that the DoDMA faces in implementing the HFA are detailed with these Strategic Goals in mind.

**Figure 3-4** illustrates the different "Action Orientated" components of DRM once the Disaster Risk Management Policy and Disaster Operations Guidelines/Manual and an effective multi sector national platform to coordinate activities is in place (HFA 1). A process to realize these is currently being supported by the UNDP. For convenience the Key Priority Areas of Action are summarized in **Table 3-4** and cross-referenced to the diagram. Emphasis has been placed on outlining at least one goal under each HFA Priority Area of Action and identifying what are the existing strengths/opportunities to build on in support of realizing this goal as well as highlighting particular challenges and constraints in current practice that could impact on timelines or performance. DM is specifically included under HFA 5.

A situation analysis is implicitly underpinned by an ideal of what is optimum, knowing that such is seldom realized. It is a goal being worked towards continuously. However it is necessary that all roleplayers agree on what this ideal goal is in order to gain consensus on the way forward. Elements of the goal used by the study team viz for the DoDMA to develop into an effective emergency management agency are detailed in Box 3-5 below. It is based on international best practice, the opinions reported in interviews/literature and the existing DRM structures already in place (see **Figure 3-1**). This goal however is best discussed during the preparation of the proposed DRM Policy, the Disaster Operations Guidelines/Manual and the establishment of the National Platform for DRM.

Acronym	Description
HFA 1	Make Disaster Risk Reduction a Priority; Ensure that disaster risk reduction is a national and a local priority with a strong institutional base for implementation. Collaboration is Key
HFA 2	Know the Risks and Take action. Identify, assess and monitor disaster risks – and enhance early warning because Early Warning saves Lives.
HFA 3	Build Understanding and Awareness. Use knowledge and innovation and education to build a culture of safety and resilience at all levels because Local Knowledge is Critical for Disaster Reduction
HFA 4	Reduce the underlying Risk. Building Resilience means reducing Vulnerability and increasing Coping Capacity to Protect Communities
HFA 5	Be Prepared and Ready to Act i.e. Strengthen disaster preparedness for effective response at all levels noting that Disaster Preparedness takes Practice.

 Table 3-4
 Hyogo Framework of Action Priority Area of Action



Figure 3-4 Components of Disaster Risk Management; after USA's Federal Emergency Management Agency (2008)

The Situation Analysis presented below informs the prioritization of the recommendations in Section 4 and is presented as a summary SWOT analysis. It is based on the data presented in Sections 2 with special reference to Risk rather than Disaster, Sections 3.1 and 3.2 above, the outcomes of various interviews i.e. opinions and insights expressed by different parties as well as knowledge of best international practice and lessons learned.

Challenges are considered issues that can be addressed in the normal course of work. Constraints are used as the basis for recommendations in Section 4. Strengths and Opportunities are used to prioritize these recommendations on the principle that the best place to start a difficult job is where it is easiest i.e. to build on the strengths and opportunities that currently present themselves. The HFA is used in order to structure the Actions in a framework that can be common and useful to all actors.

The categorization presented below is merely the conclusion of the study team. Given the complex issues and DRM stage in Malawi, it is expected that there will be differences of opinion and agreement that one size fits all is unlikely.

## Box 3-5 Effective Emergency Management

#### Effective Emergency Management is:

- **Coordinated** Synchronizes activities of all relevant players at national level and local level.
- **Professional** Initiates a science and knowledge based approach based on education, training, utilizing available experience (e.g. MDF). Set and maintain standards, ethical practice, document lessons learned and initiate improvement in practices at all levels of the process. The DEC interfaces between the higher-level scientific and formal knowledge approach with the Participatory Rural Approach appropriate for Risk Mapping, hazard Identification and monitoring at local level. This means that the DRR officers at local level are particularly important requiring both a solid academic/education background, and the ability to be efficient and effective. Good data collection and preliminary data processing and interpretation are imperative at this level.
- Risk Based Decision Process Use sound risk management principles (hazard identification, risk analysis, impact analysis) in prioritizing resource allocation. il.e. long term rather than a political view but managing the political process rather than reactive to it. This process is supported at the highest level in government (office of the president) and on going high level advocacy (parliament and cabinet level).
- Comprehensive Considers and takes account of all hazards, all phases of DRR, all stakeholders, and all impacts of relevant disasters at national and prioritizes investment at district level as per a risk based decision process. The DEC level provides needs data and a structured approach to realizing change within the financial, logistical and other resource limitations. The DEC together with village level committees collects base line and monitoring and evaluation data on project process and outcomes achieved such that interventions change in response to results achieved or alternatively lack of results. The DEC is responsible for data quality collected at village level and for preliminary evaluation and interpretation and upgrade/revision of current DRR programme. This feedback loop is essential.
- **Flexible** –At District level uses creative and innovative approaches in solving each challenging situation faced in a disaster i.e. where impact is felt.
- Integrated In consultation with all stakeholders ensures common purpose and focus of activities with respect
  to informed Risk Assessment and Development initiatives. This purpose must be informed by the insights
  and input of District, Traditional Authority as well as Village level players. Acknowledgement and
  consideration of local/indigenous knowledge is essential. Interpretation of the apparently obtuse behavior of
  populations impacted by disaster, without overt input by these communities, is seldom correct. It takes time
  and insight knowledge of local conditions, social and political factors and traditions.
- Collaborative Requires broad and sincere relationship amongst individuals and organizations to encourage trust, advocate a team atmosphere, build consensus. Initiates and leads this process at national level and encourages it at DE level. The process is facilitated by regular communication, credibility and trust between stakeholders built up over time and through effective leadership.
- Progressive anticipates a future disaster i.e. is not reactive.

## 3.3.1 HFA –1: Making Disaster Risk Reduction a National Priority

The present situation is considered in terms of:

- 1. Regional & national legislative and policy aspects detailed in Section 3.2;
- 2. GoM institutional aspects summarized in Section 3.1.1;
- 3. Capacity & Resources (very limited data available and Benson and Mangani (2008) used as reference source)
- 4. Donor and NGO partners summarized in Section 3.1.

The immediate priority under the HFA 1 reported by different stakeholders during interviews is the need to develop a Disaster Risk Management Strategy and Policy for Malawi and to launch a National Platform. The strategy could be developed by way of supporting the DoDMA to harness and coordinate the various activities underway in DRR and to upgrade DM in terms of Early Warning, Response and Preparedness at local level, particularly in the most disaster prone districts.

Despite the almost overwhelming legislative and policy complexity of the Malawian landscape there are strengths and opportunities to build on provided specific challenges are overcome. The obvious need, repeated in most interviews, for additional capacity and more resources needs to be conceptualized in more detail viz. what skills and why, how are the present resources being used, what will additional resources be used for, have job descriptions been prepared etc. While economic, skills and institutional capacity shortfalls are clearly evident there are also resources that are not being fully utilized or coordinated. Progress has clearly been made in DRM since 1991 but it does appear to be driven by outside influences and the occurrence of disasters rather than a well thought through and structured plan based on а forward-looking Comprehensive Hazard Identification and Risk Assessment/Management (CHARM) approach. The approach, defined milestones, identified indicators that can be measured and against which progress and performance can be assessed. The proposed preparation of the Disaster Risk Management Policy and the Disaster Operations Guidelines/Manual is an indication that this is changing and that DRM in Malawi is entering a proactive phase.

Critical gaps identified in this situation assessment are made with the intention of building on this forward thinking and planning, and the intention to move out of a reactive to a proactive approach already evident.

The **<u>challenges</u>** faced in moving forward into coordinated action are:

- 1. Reviewing and revising legislation dating from 1991 and updating it to meet the changed circumstances of the 21<sup>st</sup> century. Doing so would enable the DoDMA in particular to effectively act on and coordinate the international and regional commitment in Africa that is supported by the Donor community, UN and World Bank Programmes to address DRM on the continent and to utilize the information available on lessons learned elsewhere in the developing world;
- 2. The complex organizational structure of UN Agencies, Line Ministries, working committees and focus groups (such as for Disaster Management) is compounded by the different strategic agendas of selected stakeholders and differences in funding cycles. These factors influence the complexity of the DRM landscape in Malawi. The adaptation of the strategies and policies of the International agencies driven by global patterns and approaches must be overtly adapted to reflect and be applicable to the Malawian context as simply and straight forwardly as possible in cooperation with the DoDMA and relevant Line Ministries. To warrant doing so, the DoDMA will need a scientific and well founded Hazard Identification and Risk Assessment process which will address differences in risk perception between all "DRM implementing agents" detailed in Figure 3-1. This base-line know-how and agreement will facilitate identification of appropriate spatial and temporal scales and nature of intervention required and better ensure medium to long term and sustained benefit from the wide variety of interventions currently underway. In this regard use of the HFA as an analytical, mapping and planning tool is recommended. The imperative is to move into effective and sustained action and to set achievable goals with measurable outcomes within well defined time lines.
- 3. Rationalizing and coordinating the activities of different line Ministries associated with the numerous Strategies and Policies. These strategies would include: the MDGs; the Social Protection Policy and others; the policy profile in MoM&NR (EAD) for addressing Environmental Resilience and Adaptation to Climate Change and others pertaining to HIV/AIDS, Gender inter alia). The optimum outcome would be improved coordination between Line Ministries in mitigation activities associated with improving social and environmental resilience and coping capacity at community and household level. In the extensive drought of 2004/2005 Relief and Response mechanisms were heavily dependent on the Donor and NGO sector and were of a relatively short-term emergency nature. More recently in 2007/2008 most funds for Relief and Response were from the GoM (MK82M) managed by the DoDMA. with a lesser contribution by the Malawian Red Cross. However no clear documented evidence of a long term strategic programme involving explicit and sustained cooperation and coordination between the different Line Ministries each having a well defined Emergency Fund budgeted for and with clear measurable criteria against which drawdown could be made was found. Thus, there is no explicit responsibility allocated and timeliness of access to funds depends on a number of factors outside of strictly DM protocols.
- 4. There is an established effective institutional co-operation in the area of Food Security through the MVAC as was illustrated by the coordinated response during the 2004/2005

disaster (JEFAP). The factors that contributed to this are summarized in Box 3-11 below. The MoA&FS was a key player in the coordination of the response building on long-standing institutional knowledge and practice. This response in some measure also built on the challenges faced and in due course overcome during the initial stages of the 2001/2002 disasters. Elements of the challenges faced in the management and progression of this disaster are reflected in the difficulties experienced during the response to the recent 07/08 flooding event in southern Malawi. In this instance unreliable data about the impact of the flooding was submitted from the areas impacted. It was necessary to spend time and funds to return to the field with various stakeholders before consensus could be reached as to whether and what relief aid was required and what the roles and responsibilities of different parties would or could be. Logistical organization was reported by some parties to be ad hoc resulting in unnecessary duplication of expenses. This latter point is reported also at district level due to limited vehicle transport, poor road access and inadequate budget for fuel. This impacted negatively on confidence in the DM process that the DoDMA is currently in the process of rebuilding. The challenge of using existing data collection capacity that routinely supports the MVAC (e.g. those of the MoA&FS and MoH&P); communication between GoM stakeholders at local and national level and the international and NGO community persist although in different guise and level of intensity. Similarly, the process of building trust and confidence between the DoDMA, GOM Line Ministries and the donor community and other development partners is underway.

- 5. A number of NGOs active in Malawi are involved in DRR activities or in the Relief aspects of DM. Feedback during interviews and assessment during the literature review of the Strategies and Policy objectives of these organizations suggest that emphasis is on activities related to the HFA 3 and 4. There is relatively limited activity that relates quite specifically to community preparedness and response to disasters (e.g. CADECOM) or activities designed to be hazard specific (e.g. ActionAid in Nsanie). The international shift to DRR arose after the WCDR (2005) and after the previous ten years had been spent on creating awareness and building capacity in Emergency Response and Preparedness. It is now important that the GoM maintains its focus and encourages its partners to participate in the urgent need to upgrade the DM capacity and good practice in Malawi especially at the local level (i.e. local decentralized structures). That said, the current emphasis on building resilience and education does and is reported by some local NGOs to have already begun to reduce the impact of disasters. Recent interventions by the DoDMA in understanding and resolving difficulties faced by villagers in Nsanje and Chikwawa when asked to move out of flood prone zones is another example of this.
- 6. The funding cycle of many UN and Donor organizations is between 2 3 years and it is relatively rare for a project cycle to continue for as long as may be needed. How much of the funds contributed to a project, actually reach recipients at village level is also unknown. In order to improve the management thereof, limit corruption, and streamline the DRR and the emergency response processes, the cost-benefit relation of intervention must be better understood. In the past it was more common for interventions to be relatively narrow in focus and the impact would in due course be undone because of factors outside the scope of the project. A relevant example would be the agricultural development or diversification-of-income projects that did not consider HIV/AIDS, especially in the southern area where between 1987 and 1998 the increase in HIV/AIDS-related deaths was 87%. (Ngwira et al., 2001)
- 7. The difficulties of local and national NGOs to maintain a stable income base, grow in knowledge, experience and outreach capacity, and contribute to the mainstream, are not sufficiently appreciated. The challenge for locally based NGOs is to keep pace with the international debate, changes in conceptual approaches and strategies of funding agencies, and to submit successful proposals while keeping pace with implementation on the ground. There is a big difference between the local NGO and their international counterparts' access to information, ability to attract preferred job candidates, access to working resources (technology, training, opportunity) and career advancement. This combined with chronically limited resources, the need to secure funding from the parties with whom they are in some sense competitors but also advisors, inhibits frank feedback of local experience and insight to donors and international agencies and weakens the longer-term ability to negotiate proactively as well as for the international players to make sustainable interventions.

# **Constraints**

Constraints are defined as factors that are actively impeding or limiting progress in DRM in Malawi and are recommended for prioritization in Section 4.

- 1. The DoDMA is understaffed at national and district level. It is also under resourced, financially and in terms of skills, equipment and profile. Given the number of stakeholders with which it must maintain contact, liaise, and coordinate; the complex nature of the disasters and vulnerability of communities in Malawi; the limited database and information management systems that it has at its disposal it is virtually impossible to function efficiently or effectively. It is not possible for the DoDMA to do its work effectively without any spatial and other software planning and analysis tools and the staff to run, manage and maintain such systems. Benson & Mangani (2008) have detailed and summarized the financial challenges and constraints with respect to the budgetary arrangement. Suffice to note that the resources (staff, space and equipment) considered necessary (NDMP, 2004) are not yet in place and the ORT (other recurrent transactions) is insufficient (Benson and Mangani. 2008) for the recurring demands of DM or to engage in the full suite of HFA Priority Areas of Action.
- 2. Overall expenditure by all stakeholders and different Line Ministries on DRM is difficult to obtain, therefore M&E of outcomes and cost benefit over the project period, and beyond (in terms of sustainable outcomes) is also not possible. Stakeholders are reluctant to disclose financial information and funding agencies undertake their own M&E sometimes in cooperation with the District M&E. This may change in due course, but understanding where and how money is spent is relevant to effective coordination and optimization of resources and agreement on M&E indicators, outcomes and process is important to build mutual trust and confidence. The percentage of funds expended that reach village and household level and has a sustained impact i.e. realize effective change in social and individual approach and behavior, relative to the total budget is unknown. However, it has been repeatedly demonstrated in other parts of the world that investment at community level in DRR as well as in Disaster Response is more cost effective than bringing in external resources and persons. A culture of tracking budgets, accountability and transparency with respect to exchange of data, information and knowledge is required.
- 3. If one considers only the cumulative cost of Food Aid contributed to Malawi then there are significant resources available to the country. Significant funds are being spent in DRM activities and Relief. The exact amounts are not known and there is no process or protocol that facilitates tracking expenditure against return. A valid but complex question to ask is how much of the total investment reaches the community level and how could this ratio be optimized. The repeated question is why the investment has not yielded positive returns. It is beyond the scope of this study to attempt to answer the question but it is necessary to answer it in order to avoid repeating the discouraging trend of the past 15 years viz. an increase in poverty, ill health, and unemployment, among others. The role of DRM is integral to answering the question and a number of factors could be considered:
  - a. There has been limited focus on the coordinated management and informed focus of the resources to realize well-defined and measurable outcomes. Resources are allocated on the basis of need as known or perceived on the part of national or district line ministry or the DoDMA. There is no clear record of decision, nor the criteria used to direct funds. Not all agencies have rigorous M&E processes and defined outcomes especially beyond the end of a project, the latter being critical to evaluate sustainability of outcomes. This suggests that sustainability issues are not routinely monitored.
  - b. The NGO and Donor community, guided by international best practice and informed by local experience, is spearheading the introduction of DRR initiatives at local level. However, these initiatives do not all necessarily have a multi-pronged approach that, over a period of time (minimum recommended 5 – 10 years), iteratively addresses the complex set of variables that together define the vulnerability of rural Malawians to the impact of disaster. This can limit the positive contribution to household coping capacity and environmental resilience thereby actively limiting the effect of the so-called poverty ratchet. That said, a number of the international and national NGOs (Action Aid, World Vision International, DAN

CHURCH AID inter alia) have recently started to include an inception phase in projects when they can be guided by the District Executive Committee (DEC) in where to initiate projects. Village participants are involved in hazard identification, needs audit and identification of key project elements.

c. It is necessary that the cost benefit of interventions be better understood in order to improve the management thereof, limit possible corruption and streamline the DRR and the emergency response processes. While reaching consensus and agreement amongst all role players where each sector adds value, the approach can also result in inordinate delays and resolution of turf issues at the expense of the affected community. This is especially true in the case of DM when the time for talk and agreement is passed and actions required by all parties need to be known, understood and rehearsed.

Given the progress in DRM since 1992 with respect to legislation & policy, institutional mechanisms and collaboration development amongst different actors (see Box 3-1); the lessons learned and detailed in the Case studies presented in Section 2 particular strengths are evident in the current approach and practice of DRM in Malawi despite the significant challenges. These strengths are summarized below and form the basis for determining the order of prioritization of recommendations in Section 4.

## **Strengths**

#### Legislation & Policy,

- 1. Legislation (ACT 7, 1991) and a NDMP (Draft, 2005), although requiring modification, is in place;
- There are a number of sub-regional (SADC & COMESA) and national hazard specific initiatives, to which Malawi is party, addressing e.g. Food Security, Drought, Meteorology, Flood Management; HIV/AIDS, Gender issues and others. These are a source of information and experience to draw on as is the considerable body of knowledge now available on the internet, digitally and through the UN/ISDR and other UN agencies;

#### Institutional Mechanisms & Designated Responsibilities

- 1. The DoDMA has a relatively high profile in government and would be able to command the attention of the President and the cabinet depending upon the profile and prestige of the unit.
- 2. Experience, know how and willingness in the UN, Donor and NGO sectors to liaise with, cooperate and support the DoDMA has been demonstrated in all disaster events. Moreover, lessons learned in the 2001/2002 disasters have been acted upon and formalized (JEFAP). These agencies are largely involved in the development of, and are therefore knowledgeable about, the Strategy/Policy landscape that should inform the activities of the DoDMA and its collaboration with Line Ministries and with themselves. They are also familiar with international agreements, conventions etc. There is good understanding amongst the field agencies of the complex set of variables that contribute to vulnerability and coping capacity.
- 3. There is good practice in certain Line Ministries of the principles of Early Warning, Preparedness and Response e.g. MOH and MoA&FS and more recently in DRR.
- 4. Officers of Land, Housing (Physical Planning) & Survey at district level in those districts visited by the team viz. Salima, Karonga and Chikwawa demonstrated an interest and insight into DRM process. Whilst this is not to underestimate the interest and insight of any other officers or to suggest that the same would hold true in all districts of Malawi, it warrants being noted in planning the way forward.

## **Collaboration**

- There are numerous fora in which stakeholders meet that support the continuous dialogue between GoM, planners, Policy-makers, DM response and development; The Malawi Vulnerability Assessment Committee (MVAC) is an example of an effective multi-stakeholder process preparing a reliable product and accomplishing this off a limited resource base. The MVAC illustrates the maxim that it is people who make a system work, not only financial resources.
- There is apparently good collaboration between GoM Line Ministries, UN & Donor and NGO partners in addressing issues of Food Security, selected health issues, diversification of livelihoods in agriculture and rural environment, engagement with school children and building

resilience through Food for Asset (or similar) programmes such as those undertaken by WFP. This is evident at district and national level but cooperation does depend on the funds being available. If not cooperation suffers.

3. A number of local NGOs have grown in response to a specific need that persists at district level. For example, CURE grew out of the impact on the environment arising from the influx of refugees from Mozambique into the southern districts (most particularly Nsanje) between 1987 and 1992. It has subsequently developed to provide a coordination and environmentalinformation resource service (inter alia) to other NGOs, but can no longer easily attract international funding because current emphasis is on funding initiatives related to climate change.

#### **Opportunities**

- 1. Malawi is listed as one of the 14 African countries in the Global Facility for Disaster Risk Reduction (GFDRR) Track II to receive funding for the Fiscal years 2008 2010.
- 2. Numerous international NGO and FBOs funded from outside Malawi. Many of the most successful local NGOs are faith based, coordinate their activities through national fora, and are supported from outside Malawi by international faith-based organizations. This is similar to how ACT Forum functions at the SADC level and illustrates that the locally based organizations are maturing, but could nevertheless benefit from receiving more support to develop institutional capacity and expertise.
- 3. The proposed launch of the national platform will support agreement between stakeholders on common purpose of integrating DRR into development policy and planning (Poverty Reduction, NAPA, Social Protection, Agriculture, Water, and Health) such that community engagement and education is specifically included and that DRR relevant indicators are formally included in the monitoring and evaluation.

## 3.3.2 HFA –2: Know the Risks and Take Action

The Primary Goals of the HFA 2 activities are to have an effective hazard specific Early Warning System(s) that functions at local, national and sub regional level and are appropriate to the potential scale of impact of the hazard i.e. to the risks associated with the hazard. Once the hazards are identified and prioritized, HFA 2 involves 1) the development of Risk Assessment maps, including understanding and mapping vulnerability and coping capacity and thereafter 2) monitoring for early warning of rapid or slow onset disasters and finally overlapping with HFA 5 the readily understood message to different communities who also know what to do (HFA 5). These processes impact on all activities in HFA 5 viz. Disaster Management, more simply expressed as Be Prepared and Ready to Act. All activities associated with items 1 & 2 depend on the approach, skills, technology used for a) data collection and verification and b) management of information and dissemination of information.

The case study in the Box 3-6 below illustrates how a functioning data collection, compilation and reporting system can effectively mitigate against disaster impacts. It also demonstrates how Hazard Identification and Risk Assessment undertaken with the full DRM cycle in mind can positively impact on design, planning and coordination of different HFA 2, 3, 4 & 5 activities undertaken by different Line Ministries and outside agencies.

It is well understood that Malawi has severely limited resources and will therefore focus all DRM efforts on issues that have been agreed upon. For instance, that Floods and Droughts (Hazard) resulting in the greatest number of Affected persons arising from Food Shortages escalating to Famine (Disaster) in years where there was prolonged drought (1991/1992) or a combination of highly variable weather impacting the food harvest and/or the combination of both dry spells and prolonged drought and floods in Malawi. However, for completeness and possible usefulness in the future, the paragraphs below summarize and highlight gaps in the perception of Hazards and Risk. These are noted as challenges and in some instances appear to constrain an effective long-term strategic and methodical approach to DRM in Malawi based on investment prioritized per quantified Risk rather than per what Disaster Relief has cost in the past.

#### Box 3-6 Cholera Management

#### **Cholera Management**

The Epidemiology Unit for the Ministry of Health reported a cholera outbreak that originated in Nsanje and Mulanje on 7 and 10 November 2007 respectively.

The Epidemiology Unit would receive data from the districts every week by email or phone. This was routinely verified depending on the standard in which it was received. The data was entered into the national database, then automated national and district reports were produced using MS Excel. Cholera control activities carried out in districts included health education activities such as health talks, drama and role playing; water chlorination at household level; supportive supervision; case isolation, management and follow-ups. Weekly cholera monitoring and evaluation reports were sent to all stakeholders. Districts with functioning e-mail (thanks to WHO funding) received these regularly, while receipt of hard copies by other districts was irregular. Cumulatively 887 cholera cases and 13 deaths were reported for 5 November 2007 to 2 March 2008, with a case fatality rate of 1.5%.

Despite these capacities, the incidence of cholera has risen in the past couple of years. To fully understand the reasons it would be necessary to understand the different factors that contribute to the Risk of Cholera outbreak. It would be necessary to map the increases in cholera incidence at a community scale, correlate with water & sanitation infrastructure, water quality monitoring of surface and groundwater, and evaluate the distribution of water points as well as the construction thereof. There is no documentation of liaison between the Ministry of Irrigation and Water Development (MoIWD) and the MOH/NHA. It is possible that there is inadequate supervision of the design and construction of boreholes (depth, Sanitary seals, casing etc) training of the local community in borehole maintenance and monitoring and appropriate measures to limit contamination of water points used for drinking, cooking and personal washing. It is unknown, but possible, that positioning pit latrines and or VIPs is not undertaken in consultation with the MoIWD. Doing so could limit any threat of diffuse and/or point source pollution. It is also possible that communities are not trained about waster disposal especially along the lakeshore districts and in valley areas. Similarly, coordination with the DoHP would support longer-term education initiatives around hygiene and sanitation including the full process cycle of Cholera along with training in the preventative measures such as washing of hands, boiling of water and use of chlorine. This integration of natural and social process supports ownership of the environment, risk reduction and proactive disaster response.

#### The **Challenges** are:

- 1. At community, household and individual level the every-day challenges of cash and subsistence agriculture are, for more than half the population, compounded by chronic hunger and poverty, with increasingly fewer assets (natural, social, and capital) to draw on. Lack of infrastructure and distance to markets, access to potable water or water for irrigation, ill health, malnutrition and often the need to care for increasingly larger numbers of family members, are additional disadvantages: i.e. there are high levels of Vulnerability and limited or declining Coping Capacity. There has been investment (see bibliography) in understanding the factors defining household Vulnerability to Food Insecurity and these are increasingly well understood in Malawi. Factors defining individual vulnerability are less well understood and it is seldom that data is both age and gender disaggregated or interpreted.
- 2. The distinct pattern of food aid distribution suggests that the District Assembly (DA) would be best placed to coordinate, supervise, monitor and evaluate any interventions against measurable and specified outcomes. Trained and dedicated officers and finances are very limited at district level and at national level. At present, the MEPD has Monitoring and Evaluation (M&E) Officers at District Level. The indicators used to monitor and evaluate the implementation of development programmes in support of the MGDS can be used if specific DRM indicators and time lines to evaluate sustainability of outcomes, efficacy of early warning, and timeliness of response are added to M&E outcomes of DRM interventions regardless of which MGDS theme they fall under. This data would be required for all major stakeholders and actors in DRM in order for the DoDMA to steadily upgrade the capacity to review coordinate and focus interventions to realize medium to long-term goals. The M&E officers in the districts interviewed (Karonga, Salima, Chikwawa) are well educated, efficient, motivated but requiring specific training in M&E and DRM. Learning by Experience is costly and time consuming and if such skills can be taught and officers actively mentored the return on investment is almost guaranteed;
- Aside from needing the software, hardware and skills to manage a large and complex spatial and relational data base, differences in units of spatial scale used for data collection, planning of DRR and DM interventions and or for M&E activities can unnecessarily complicate effective data

and information management especially if used by different parties in different activities e.g. faith based NGOs function within their church structures such a diocese or presbytery and other related collection of communities. There are good reasons for doing this but in some cases they do not align with administrative boundaries (e.g. EPAs vs. TAs) or with the spatial units for which the socio-economic indicators are collected and interpreted. In other cases, villages are recommended for intervention by an NGO that could be very effective within that village but factors outside of the Village, TA or district area may not have been identified and these could inhibit the medium to long-term improvement, despite a successful intervention in the village(s). An example of this would be uncontrolled land degradation in the headwaters of a catchment resulting in a landslide wiping out gains made in village down gradient. This can complicate the objective and quantitative evaluation of outcomes by participants and means that it is more difficult to take timeous corrective action in future, if needed. This may or may not be a significant issue on the ground but it does have impact on data and information management.

- 4. There is a history of addressing epidemics through the rural health care centers but limited integration of this knowledge in managing these as secondary and tertiary impacts of hydrometeorological disasters and local and community preparedness. However there is a history of institutional knowledge and good practice in the MoPH and involvement of the MoIWD in the NDPRC and this can be addressed in due course.
- 5. A review of legislation relevant to the development and management of water has not been undertaken in this study in any level of detail. It is however very relevant and there is consideration of conflict between selected agricultural policies and riverine and natural resource management policies e.g. with respect to planting crops within the riparian zone. Sedimentation of rivers is one of the earliest signs of environmental degradation up stream and in the rift valley topography. This will result in significant sedimentation and resultant aggradations of and changing patterns in river courses on valley floors. These "natural processes" make adaptation to climate change more difficult at village level and implementation of conflicting policy, or policy that does not accommodate the resultant environmental change, or pace at which it changes, will work against DRR efforts.
- 6. Given the complex nature of disasters in Malawi a natural catchment or basin with consideration of aquifer boundaries is a natural spatial unit in which earth processes can be mapped, monitored and the impact on communities understood in both economic and social terms. It would generally allow for coherent natural vegetation spatial units, Livelihood zones and administrative units associated with water management. The NAPA does not specify spatial units. Once a National Platform for DRR is launched in Malawi it will facilitate such coordination and interdepartmental programmatic design and management issues inter alia.
- 7. Knowledge of geophysical hazards and the impact of these slow but large-scale earth processes on the more frequent disasters such as flooding and landslides is not appreciated. The complex causes of the disasters are not widely appreciated and are therefore not being holistically factored in to the DRR measures. This is especially true in the Lower Shire area but is also true for lakeshore areas, areas where landslides are frequent, areas where cholera and other diseases appear to be secondary and tertiary impacts of the primary event (flood or drought). The risks of a low frequency high impact event are being underrated on the basis that Malawi has to date only experienced earth tremors. Given that Lake Malawi exists because of significant tectonic activity in a Rift Valley, the study team is of the opinion that it may be unwise because the impact of such an event would dwarf the cumulative impact of more frequent events such as floods and droughts.
- 8. DRM must be based on experiences of the past but also be forward-looking, if there is no historical memory and/or institutional record of the low-frequency events. The distinction between Hazard, Disaster and Risk is not fully used in either strategic plans or in planning DRR interventions. This is compounded by a lack of a standardized scientific Hazard Identification and Formal and Rural Risk Assessment throughout Malawi (see section below). Any prioritization of where and why to invest must be based on such an assessment.

The costs of undertaking such preparedness exercises need not be exorbitant (see Boxes below). At least two persons interviewed reported that such "local" knowledge of the early warning signs of flooding in the Lower Shire used to be common, but that as the river regimes and flood patterns change so did the preparedness and therefore responsiveness of the relevant communities. It is further indication that the flooding is a result of more than hydro meteorological factors.

## Box 3-7 Community Early Warning

# **Community Early Warning**

The results can surprise and the historical tsunami of 2005 in the Eastern Indian Ocean was a perfect example of this. Earth scientists had warned of an earthquake in the Sumatra Arc possibly causing a tsunami but were advised that this was an academic consideration. However, amongst all islands impacted, the only island on which there were no fatalities was an isolated group reliant on stone-age technology and oral tradition. They heeded the early warning signs of nature because stories of the consequences of these signs had been passed from generation to generation, and the whole community believed the interpretation of these signs and understood what to do. That is, simply because they did not discount the Risk of such an event occurring, they were prepared.

## **Constraints**

- 1. The lack of spatial and time series information on how the state of the environment correlates with the socio-economic data can obscure impending decline in coping capacity. Much appears to rely on detailed local knowledge and the complex mix of cultural, social, economic and survival issues and the time needed to encourage change and build individual and community resilience, before addressing the challenges of upgrading the environment will vary from community to community and district to district. There is much local "process" history held by individuals (documented and undocumented) combined with a culture of withholding information that can inhibit progress. It can also lead to a mindset that withholding knowledge and information secures opportunity or advantage rather than the capacity for adding value being the measure. This attitude will inhibit development of the fledgling consulting community and healthy competition needed to promote a culture of excellence, competence and efficiency.
- 2. Early Warnings are hazard specific and a brief summary of the current status of Early Warning for the most significant Hazards is contained in Table A.3.5 (Annexure A). The primary constraint in developing the EWS for the different hazards is the lack of a well-developed Trans-disciplinary research culture in the hydrological and geophysical fields primarily due to the lack of financial resources to support it. There are however international programmes that can be leveraged and this will depend on an emerging generation of graduates adopting an outward looking view and a mind set of asking "How much can be done with How little".
- 3. Existing hazard specific EWS are summarized in the Table below. It is noted however that there is limited to no early warning in place at community level. The Box 3-9 in the HFA 5 section below illustrates the significant role and advantage in terms of saving lives, even for high impact low frequency hazards, that communities can play if they are involved in EWS. The need for raising awareness in children is illustrated in the Box 3-10 below. In general these signs do not require expensive technology or finances. They are most effective when relying on visual and aural observation and common sense.
- 4. To lead effectively the DoDMA will need a comprehensive relational data base containing details, time lines, recipients and anticipated outcomes of all activities being undertaken in the DRR field and related aspects of development initiatives. To do so time efficiently without GIS support at district and national level would be difficult and very time consuming. The essence of good Disaster Response lies in minimizing the delays between impact and response.
- 5. At present there is no systematic monitoring of DRM interventions, or evaluation of the outcomes unless the project is initiated as a development programme or project in which case it is monitored by the MEPD at district level. In the districts visited (Karonga, Salima, Chikwawa) the officers were found to be well educated, motivated and thoughtful but lacking specific training in the task, needing the tools to collect, collate and undertake preliminary interpretation of the data, and forthrightly asking for supervision, mentoring and encouragement. This could impact negatively on the monitoring of long-term impacts of sustained behavioral and environmental change, which is the desired outcome of DRM interventions, development of constructive and trusting relationship between the different groups in the district and in different communities and villages. The Officers in charge of Planning at district level had a ready grasp of the interdisciplinary nature of DRM, an appropriate technical background and provide a ready link with land use planning practice and environmental and catchment management.
- 6. The intimate relationship between environmental resilience and human Coping Capacity is inadequately understood. This impacts on a number of factors associated with EWS and DRR interventions. For example, it would appear that flooding in the Lower Shire and along the

lakeshore is as much related to environmental degradation in the headwaters and neotectonic activity both of which increase the rate of sedimentation on the flood plain. If this is correct, the hard engineering solutions proposed may not be appropriate because the scale and rate of the social processes impacting in the headwaters and the temporal scale of the tectonic process is not adequately considered in the design of the solution. Similarly, if neotectonic activity is discounted despite recent evidence north and south of Malawi and in the same tectonic province, there is a risk of significant impacts to infrastructure damage and possibly lives. This is exacerbated by the increasing modern housing structures in rural communities, if any new development does not take it into account and if basic preparedness education is not initiated under HFA 3.

There are limited <u>strengths</u> in this field of activity and a concerted effort supported by high-level advocacy is needed as the products of this HFA are essential and underpin all activities in HFA 3, 4 & 5. The strengths pertain to the coordination, sharing and effective processing of data related to vulnerability with special reference to Food Security. This arises from a number of factors viz.

- The WFP and other agencies related to Food Aid play an active and constructive role in relief and early warning initiatives;
- FEWSNET has had an active and constructive presence in Malawi for many years (See Box 3-8 below) and the MVAC although recent is an effective and proactive agency in the MoEPD working in close collaboration with the DoDMA and other stakeholders;
- The GoM has since 1991 gained experience and acted on lessons learned during the larger disasters of 1991/1992, 2002/2002, 2004/2005;
- SADC based programmes and agreements in Food Security, Drought Management, Flooding and Disaster Response supported by cooperation between the different national meteorological offices have promoted sharing of knowledge, experience, access to information, learning and data and Early Warning Systems for Floods and Droughts. However, the programmes are usually applied at a national rather than a local scale and local scale forecasting is required in Malawi.

## Box 3-8 FEWSNET strengthens DRR in Malawi

#### FEWSNET strengthens DRR in Malawi

The Famine Early Warning System-Network (FEWSNET) was established in the early 1990s as a USAID funded project with the main objective of strengthening the early warning system.

FEWSNET mandate has expanded as has the pool of partners with which it works through the Malawi Vulnerability Assessment Committee (MVAC). Here it provides technical support to the working group. As a result a wider impact is achieved particularly through capacity building of the members of the MVAC.

In the Ministry of Agriculture and Food Security, FEWSNET plays a key role in building the capacity of the frontline staff and all those involved in carrying out annual crop estimates. It also participates in building the Market Information System of the Ministry, publishes monthly reports on the food availability prospects and trends, agricultural price trends, and on rainfall expectation among others. To do this, FEWSNET conducts frequent field assessments on crops, markets, prices, and collects data on informal cross-border trade. Thus, besides operating as an early warning system, FEWSNET also operates as a monitoring tool particularly through its participation in the MVAC.

Through its partnerships with many partners, it provides the information at various levels that assists in decisionmaking including strengthening disaster risk reduction by raising awareness at community level and enhancing the preparedness of various stakeholders.

There is a definite requirement for effective institutionalization of HFA Priority for Action 2, dealing with a science-based framework to identify, assess and monitor disaster risks and enhance early warning. With recent developments in the field of Earth Observation (EO) in Africa, the appropriate emphasis should lie in the investment in the combination of modern information and communications technology (ICT) with new methods for the real-time, in-situ-and space-based monitoring and analysis of a wide range of meteorological, hydrological and geological processes. In addition, parameters (e.g., water quality

indicators) that have a bearing on the health of humans, animals, agriculture and the natural environment should also be included.

This investment in measurement and monitoring technology must be matched by an equivalent investment in the technological training of personnel in operations and maintenance of the EO infrastructure, and training of scientists for the integrated analysis and interpretation of the EO data streams.

A number of recommendations are made in regard of hazard specific EW and DRR.

## 3.3.3 HFA 3: Build Understanding and Awareness

An important goal of HFA 3 activities is to ensure that all actors at all levels have the necessary awareness and understanding of the risks that they, or those they (in their personal or professional capacity) are responsible for, are exposed to. This empowers them to participate actively and constructively in reducing those risks (HFA4) and to respond proactively in the event of a disaster (HFA 5).

Given the structure for Disaster Management shown in **Figure 3.1**, it is important to use education to build a culture of awareness of risk and to promote self reliance at individual, household, village, TA, District and national level, parliament and cabinet level. Because the Civil Protection and Development Committees play a key role in the collection of data for both Early Warning and Impact Assessment following a disaster it is imperative that they are appropriately trained and understand their roles and responsibilities in event of an impending or actual disaster. The committees will be/are responsible for data collection, communication and coordination at ground level in the area of impact and support distribution of aid, coordinate recovery initiatives and are best placed to participate in DRR activities. The case study in Box 3-9 below illustrates why long term investment in community education is warranted even for low frequency but high impact events.

#### Box 3-9 Case Study on community based DRR from China

#### Qinglong Province of China during the Great Tangshan Earthquake (7.8 magnitude) in 1976.

During this earthquake, 240 000 people died and 180 000 buildings collapsed in the surrounding Chinese provinces. However, no one in Qinglong province died, and many of the 470 000 residents were evacuated from their homes before the earthquake hit. Research showed that Qinglong had successfully prepared for and mitigated the impact of the earthquake for several years beforehand. Provincial administrators were able to combine scientific information, public education, extensive preparation and speedy countywide communication to prevent a human tragedy.

Preparation included raising citizens' awareness through films, pamphlets and posters in a countrywide public awareness campaign from 1974; an earthquake office and responsible offices were set up; leaders were trained to be both sensitive and efficient; and citizen monitors were trained in a precursor-monitoring network. At 16 stations they monitored changes in level, color, temperature, chemistry and quality of water; release of gases; strange animal behavior; and changing weather. Crustal stress (developed in the 1960s) was used to detect changes in magnetization. Some 24 stations monitoring crustal stress were established, each fitted with three sensors. Stress measurements were taken every 2-3 hours/day/sensor and transmitted daily by telephone or telegraph.

In response to an earthquake alert in July 1976, local residents remained calm and focused as they organized themselves to carry on their tasks. They received an official warning and validated it with data changes in factors such as water, the weather and animal behavior in their local neighborhoods. The head of the provincial Chinese Communist Party took up residence in a makeshift tent made of poles and a plastic sheet in order to communicate the seriousness of the situation and also visited 23 towns. Provincial engineers and other officials maintained a 24-hour watch at key points such as reservoirs.

This case has shown that even powerful earthquakes can be successfully prepared for. It highlights that:

- 1 Massive earthquakes are preceded by visually observable precursors;
- 2 There are a variety of disaster mitigation technologies available; and
- 3 Through networking among all levels of society and open communication of disaster information, earthquake vulnerability risks can be mitigated.

A multidisciplinary approach is recommended and it is essential that information be shared with the public through public administrators trained in disaster management. These factors apply equally to low impact high frequency and high impact low frequency events.

Both local and international NGOs and FBOs are involved in HFA 3 activities and on Hazard specific HFA 4 interventions. The larger donor and UN agencies participate in longer-term sub regional programmes that can be considered to be HFA 3 activities.

A number of international agencies (WFP, FAO, ActionAID), in response to the UN/ISDR Safe Schools Year (2007) and the ongoing need to improve Food Security have initiated education in schools that have a community outreach element. The initiative by ActionAID relates to, amongst other factors, the risks to school infrastructure. The initiatives raise awareness amongst school children and offer skills training and through them they engage with parents and in due course use the school as a learning center for the community. A local NGO CADECOM has initiated a bold programme to train community members in Participatory Appraisal and Risk Assessment sending those selected to the University of Cape Town, RSA to become trainers themselves and so build the skills base and initiate a peer to peer learning process within the community. This approach of Training the Trainer/Teacher can contribute to sustained public awareness if supported by Line Ministries.

Although the MoEVT has already embarked on introducing DRM topics in school curricula (primary and secondary), there is limited incorporation of the same in adult literacy programmes or at tertiary level. The ongoing formal and informal education outreach programme in nutritional health is an example that could be followed by the DRM community, building on lessons learned. The Box 3-10 below illustrates the advantage of raising awareness and understanding amongst school children of Hazards, the Risks associated with them and the Early Warning signs thereof, even for a hazard as unexpected and unimaginable as a tsunami. It also implicitly illustrates the importance of Comprehensive Hazard and Risk Mapping (HFA2) another element that can easily be introduced at school level and adult literacy programmes.

## Box 3-10 Tsunami Early Warning

#### Making a difference on the ground

While Malawi is a landlocked country and unaffected by tsunamis, the example of a schoolgirl who raised the alarm just before the devastating events of 26 December 2004 shows how public education and alertness can save many lives. English holidaymaker Tilly Smith, 11, spotted key signs in the sea in Phuket, Thailand, that she remembered from a geography lesson two weeks earlier. She persuaded her parents, seven-year-old sister and other tourists to flee their beach and hotel. When the tsunami struck, no one was killed on that beach, although at least 200,000 people in 13 countries lost their lives.

Tilly praised her geography teacher Andrew Kearney, who showed her class a video of a tsunami in Hawaii. She said: "I noticed that when we went down to the sea it was all frothy on top. It was like beer that was bubbling. I was having visions from the Hawaiian videos that I had seen two weeks before."

She told her mother, who had helped with her geography homework, and her father, who alerted a security guard. They took refuge with the wave only minutes away. "I just thought that it was a bad day at the beach, it was very unusual," said her mother Penny. "Tilly just started going on about this froth on the sea and started getting hysterical, saying that she had seen a video about the one in Hawaii in 1946."

A spokesman from Tilly's school said it was proud of the 11-year-old and her teacher Andrew. He added: "He is very proud of the fact that Tilly was able to put in practice something that he had taught her."

Because of the funding cycle for many Donors, NGO and FBOs is mostly three years and the UN agencies work on a biennial budget process, it is difficult to ensure a sustained and maintained approach. However, it may have a greater chance of success if the initiative is supported by a regional or sub-regional initiative and at the highest level of government driven by a medium to long term Framework for Action. It requires the introduction of the materials and skills training at all education levels, encouragement and support for local organizations that have a long term motivation and investment in the country, district or village. It also required a concerted effort to engage the media (radio and TV), public personalities and leading business players to participate in the raising of awareness amongst the general public.

Because of the regular emergencies that Malawi faces, it is a challenge to keep pace with high priority issues in the short term while at the same time keeping focused on a long-term goal especially when the short-term crises are competing with the long-term goal for scarce funds. The short-term crises are unlikely to abate. The disaster overview in Section 2 and numerous statistics on the socio-economic and health attest to (see bibliography) the frequency of and impact of disasters is increasing, the

vulnerability of the population and the environment increasing and potential to increase the coping capacity of the population being eroded along with environmental degradation.

This state of affairs cannot only be ascribed to the chronic shortage of funds, a significant percentage of which appear to be made available for Relief Aid. It must also in some measure be a result of the focus on Crisis. Because of international trends a move away from the focus on Relief towards Risk reduction activities has been initiated in Malawi both by the DoDMA and the external agencies. The DRR related policy landscape in Malawi addresses long-term issues, but does not yet have a coordinated Advocacy, Education and Action programme involving all relevant line ministries in order to coordinate and allocate external funds towards realizing a common medium to long term goal. Advocacy and Outreach must extend also to those organizations involved in Relief to ensure that the long-term approach is initiated during and immediately after a disaster.

The development of a National Platform will facilitate this if underpinned by a sound scientific and comprehensive Hazard Identification and Risk Assessment that includes socio-economic and environmental aspects in Vulnerability and Coping Capacity. Doing this will facilitate overt identification of measurable indicators to be agreed upon and monitored by all parties as per routine line function duty (similar to MVAC approach), a defined and agreed upon methodology and standard as how to measure and process the data. It then becomes possible for the DoDMA to quantify the progress towards reducing Risk using the R=HxV/C equation. Initially this can be approached simply with complex variable sets being included as the resources, skills, data inter alia become available.

HFA 3 Activities relate primarily to ensuring sustainability of DRM activities in the future (medium to long term) and integration of DRM principles and practice into the fabric of the society through building a culture of self reliance, education at all levels about preparedness and integration of risk reduction activities and principles in everyday life and economic and infrastructure development. This requires a long-term strategic intention supported by all government sectors. The immediate priority under the HFA 3 reported by a number of different stakeholders during interviews is the need to raise awareness at high levels in government. Stakeholders also identified, resolving differences in perception of the risks faced at community level and education of local leaders and civil protection committees in DRM, especially in DM processes. Special emphasis was placed on assessment of impact of a disaster, need and distribution of Relief Aid without personal or political interest.

For a number of reasons Malawi faces a number of challenges in this regard. These are:

## <u>Challenges</u>

- 1. The international Donor/NGO community is involved in DRR activities and also investing in community risk assessment, preparedness and readiness. It was reported in interviews that the different initiatives are coordinated at and through Line Ministries (who advise in which district interventions may be required) and at district level (who advise in which TAs and Villages the proposed intervention is most required. There does not appear to be a strategic perspective on all activities underway throughout Malawi nor a coordinated approach that relates to the geographically specific Hazards exposed to and Risks faced. The project areas are selected in discussion with relevant Line Ministries, the DoDMA and communities are generally selected in discussion with the DEC.
- 2. Local NGOs function off a very limited resource (human and financial) base and compete for skilled staff with international organizations offering attractive salary scales, working conditions and training opportunities. These local NGOs do not have comparable access to information and trends in funding patterns. Without support in terms of proposal preparation, facilitating access to the national and international debate and funding, purposeful inclusion in government and international NGO programmes these agencies could suffer despite the fact that they are doing significantly good work. Moreover, they are in touch with issues on the ground, often have stable staff with good knowledge of local conditions built up over time and have personal motivation to remain in an area. An example of such an agency is CARD operating in only three southern districts and which is one of the rare NGOs that remained in Nsanje despite other organizations leaving, discouraged by limited to no positive change. As a result it has more thoroughly invested in understanding the causes of failure and factors for success and is now seeing returns in long-term investment. CARD suggests, "Resilience activities must be village specific".
- 3. The local organizations, especially the FBOs, are sometimes associated with sub regional or international groups from which they receive funding. However, they do not necessarily have a significant national profile that would influence strategy and policy decisions of different line

Ministries or the DoDMA. However these agencies have a level of insight and understanding of the time lines needed to ensure sustainable gains and of how best to adapt policies to local level conditions. In due course as CONGOMA becomes more effective and as local NGOs derive benefit from participating in this forum, this circumstance will change and they can become an informed lobby group.

The **constraints** listed below are considered to be areas requiring immediate action if progress towards realizing the goals of HFA 3 activities are to be realized. Each would appear to depend upon a successful Advocacy; Awareness and Education initiative by the DoDMA within the GoM and with agencies not involved in DM or DRR aspects specifically. These are mentioned knowing the significant financial and resource constraints faced by the DoDMA but are cited for forward planning purposes. The emphasis has been on what is considered to be a critical gap identified during the Situation Analysis. The analysis identified the need to focus on high level Advocacy in the GoM both to raise the profile of DRM and obtain buy in for a coordinated and cooperative approach by all relevant line ministries to DRM. The longer-term view focuses on developing a common goal that external funds are spent less on relief and more on growing the Resilience of the present and future generations of Malawians. There is a need for focus in this area of action for long-term benefit in the DRM field and especially in the field of EW.

- 1. There is no formal National Platform for DRM in which the issues raised above can be addressed. Sustained emphasis will be secured through high-level government and private sector buy-in.
- 2. There is no agreed upon and common measure of what comprises a disaster including in this decision a measure that may need to be area specific because of differences in coping capacity in different districts and even at TA and village level. The data does appear to be available to undertake this, but doing so would depend on a comprehensive Hazard Identification and Risk Assessment at local level. This is not currently available but a start has been made (see CADECOM and other case studies). Until this is completed and differences in Risk perception between different levels of government are resolved, Advocacy, Education and Awareness Raising at local level and village level is inhibited. This is especially important given that effective DM starts with preparedness at village level.
- Outside of defined fora (e.g. MVAC, JEFAP etc) data and Information is difficult to obtain; information is withheld and in some instances is not freely shared between Line Ministries or with individuals. This approach will significantly inhibit moving forward in DRM that depends on a culture of 'Knowledge Shared is Knowledge Gained'.
- 4. Limited use of media and high profile persons to advocate for DRM activities and education at all levels of society and in the GoM, the same needing to be informed by reliable Risk Assessment at various scales;
- Limited to no training in DM at tertiary level and no mentorship programmes within Government service to attract, train and retain skilled and motivated new generation staff (MSc level) in the necessary DRR and DRM concepts and practice offering opportunities for career development comparable to the larger external agencies;
- 6. Resolution of how to address the extensive responsibilities assigned at district level and below in DRR, and especially with respect to EWS and DM process and protocol, without delegated financial and other resources. This significantly inhibits functionality at district level, results in undue delays in decision making during disasters and impacts on successful DM which cannot be achieved if a Top Down process alone is applied;
- No DRM specific Monitoring & Evaluating programmes other than that undertaken by implementing agencies themselves and or falling under the M& E officers of the MEPD scope of work; No clear indication that DRM elements are embedded in development programmes;
- 8. No specific follow up after Relief & Recovery interventions to advocate and initiate DRR activities and approaches.

## Strengths and Opportunities

There are a number of encouraging signs to support the current initiatives and in time to develop a research capacity and culture in this field in Malawi.

1. It would appear that the MoA&FS is one of the Line Ministries that works in both HFA 2 (Early Warning) HFA 3 (Education & Innovation), in HFA 4 with specific reference to the impact of

droughts on the staple crop of maize and more recently in tuber and other crops as well as HFA 5 (was significant factor in successful response to drought of 2004/2005);

- Similarly, the MoPH with reference to epidemics, HIV AIDS, Malnutrition and other Vulnerability factors that contribute to the decision to declare a disaster or not. The DoDMA has a significant role to play in engaging with Line Ministries to build and undertake Hazard specific Education and out-reach programmes and grow into HFA 4 and 5 initiatives as part of routine ministry function such as is the case with the MoA&FS and the MoPH;
- 3. Many different fora are used for coordination of various activities all associated with DRM, but primarily growing out of Food Security and related issues. These were established to coordinate Food Aid and other relief measures and were led and coordinated by the Minister for the MoA&FS with sustained and maintained support by FAO, WFP and others. This is appropriate given the institutional know how and strengths of this ministry, the emphasis on upgrading agricultural practice and productivity and facilitates the introduction of DRR elements into DM activities during Recovery and Rehabilitation.
- 4. Based on interviews conducted in the districts of Karonga, Salima and Chikwawa as well as with younger Malawian staff in the international and local agencies there is a skilled and motivated generation with aspirations and vision working at district level and at national level with a refreshing approach, commitment, independent thought and insight;
- 5. There are definite signs of emerging strength in grass roots initiatives (CURE, CEPA, CARD, FBOs) and professional services industry; continued and active engagement with the international community will support this development if not viewed as competition for scarce resources;
- 6. The limited interaction with the private sector in the Chikwawa district indicates willingness to cooperate;
- 7. Good national ITC infrastructure but not supported by appropriate capacity in IT hardware and skills in GoM offices;
- 8. There is more data and information and know how freely available through digital networks than ever before; in some instances it is not readily accessible because of limitations in item 6 above; the advantages of accessing this information is clearly evident in how the FBOs have aligned their programmes with Best International Practice inter alia.

The constraints addressed above inform recommendations which build on the evident strengths in this area of action.

# 3.3.4 HFA 4: Reduce the underlying Risk

Disaster risks relate to the social, economic, environmental conditions and land use practices. These elements of social and economic behavior are addressed in sector development planning & programmes and can also be integrated into post-disaster situations. HFA 4 activities relate to the promotion of integrated environmental and water resource management, sustainable use and management of natural resources, initiatives to adapt agricultural and related activities to minimize the impact of climate variability and extremes planning. These activities also increase the social and economic coping capacity of a community through diversification of livelihoods, incorporating disaster risk reduction principles into rural Development and Agriculture Development Programmes, and the management of vulnerable mountain, lakeshore or floodplain ecosystems.

From a policy, institutional and social organization point of view it involves strengthening capacity at national and local level through training and acquisition of the necessary data, tools and technologies, upgrading coordination and communication between stakeholder at and between different administrative levels, preparing and updating disaster preparedness and contingency plans. Regular practice in the execution of these and special attention to the most vulnerable groups i.e. those requiring physical assistance and social security net is necessary. The comments and summary analysis of Challenges, Constraints, Strengths and Opportunities in this field of activity arises out of comparison against what is the goal of the HFA 4 described above and what was found to be underway during the study.

Significantly, the Line ministries that receive the lions share of the Annual Budget (See Table 3. 1) are those most involved in the HFA 4 type of activities at community level i.e. MoA&FS and MoPH. Based on the activities of the NGO and donor sector (see Table 3.3 & 3.4) it is assumed that the MoLG&RD, the MEPD are increasingly involved since external agencies are directed as to where to invest resources

in development by the relevant line ministry at national and at district levels. Moreover, there are now Monitoring & Evaluation (M&E) officers at district level who monitor the progress and evaluate the outcome of such projects. There is strong awareness amongst the civil society and donor community of the need to integrate DRR into development programmes (this arises from events post WCDR, 2005). In some instances it was reported in interviews that these are coordinated with the DoDMA, but not always. The MoLG&RD are much involved in community development issues. The MoE&VT is increasingly involved in DRM through various education and outreach programmes undertaken primarily by international NGOs working to improve school attendance (Nutrition – WVI, FAO), upgrade school buildings (Safe Schools projects, secure access to schools during flooding –ActionAID) and to secure sustained school attendance by girl children inter alia.

There is significant activity in many of these fields in Malawi but much in terms of the environment remains at the policy level. The same is understood to be the case for water resource management, i.e. prepared in the event of distribution of water supply or access to potable water during an emergency. Further study would be required in this regard. However, the Health and Agricultural sectors in cooperation with the NGO sector have a number of development and preparedness programmes designed to reduce the vulnerability of the communities.

Many of the faith based NGOs work in this area especially with respect to risk assessment and preparedness i.e. HFA 2 and HFA 4 activities are integrated into a programme that is appropriate. (See activities of CADECOM, ActionAID, FAO, WFP, UNICEF and others in Table A.3.2 and A.3.3, **Annexure A**). More recently, prompted by the Safe Schools Programme that was launched last year by the UN/ISDR, international funds have become available for this purpose. In addition, selected UN Agencies (UNICEF, WFP, FAO, WHO) and NGOs (e.g. ActionAid; WVI) have been engaging with schools, as have some local NGOs. It can reasonably be expected that the international NGOs and Donor Agencies will respond and consider projects or programmes in the near future that will be aligned with the aims and objectives of the Safe Hospitals Programmes launched by the UN/ISDR at Davos earlier this year.

The DoDMA has restricted financial and human resources and capacity. Although the DoDMA well understands the need to engage in reducing the underlying risks in a sustained manner, it does not, at present, have the financial resources. It has however responded to this need where it can e.g. by facilitating people moving out of flood prone areas in the Nsanje and Chikwawa districts. This intervention was achieved through taking the time to understand the social, economic and leadership issues that were inhibiting movement of people between two Traditional Authority Areas thereby moving towards resolving a longstanding impasse in HFA 4 efforts in this area. This illustrates that there is merit in the opinion expressed by CARD viz. that it is necessary to understand the issues ("human" i.e. social, political, economic and environmental) at village level for HFA 4 interventions to be successful.

Given the scarce resources and the reality that small but frequent disasters can easily wipe out hardearned development and resilience gains it is appropriate that Disaster Response and Recovery are the focus of the DoDMA until such time as the management of disasters is exemplary. One party interviewed indicated that 80% of the effort of the DoDMA should be allocated to DM while Line Ministries address the HFA 3 & 4 elements prioritizing and coordinating with the DoDMA on matters pertaining to EW, preparedness and community response to disaster (including monitoring for EW (HFA 2), impact assessment, immediate response and recovery elements (HFA 5). This was a view echoed by others. It is imperative that there be good co-ordination of strategic policies and planning of medium to long term interventions because successful DM (HFA 5) is not independent of the success or failure of HFA 2, 3 and 4 interventions.

In summary, HFA 4 is about people and their relationship with the environment. Interventions must directly address the co-dependence between environmental and human resilience. Communities developing the coping capacities to ensure environmental health or overcome inherent environmental limitations by adapting agricultural and other economic activities will also reduce vulnerability.

The challenges that are present but can be or are being addressed, are summarized below. The constraints summarize aspects considered to need urgent attention. The Recommendations in Section 4 seek to build on the strengths based on the prioritization of the constraints.

## **Challenges**

1. Construction of boreholes and sanitation require attention with respect to protection against contamination and security of water supply in event of disaster.

## **Constraints**

- 1. District level budgets for emergency preparedness or response are not available and this does not encourage initiative and self-reliance. There are limited ITC facilities at district level;
- Schools and hospitals appear to be vulnerable buildings and these are community centers, and potential shelters. No planned Protection of Life line Infrastructure was identified in the literature or during interviews. This is a necessary item of coordination with the MoE&VT, MEPD, MoLG&RD as is the case for Hospitals;
- 3. No overt strategic plan to drive and coordinate HFA 4 activities is currently underway that considers the planned interventions by different agencies over the next 3 10 years. The strategy should be based on adequate Hazard Identification and Risk Assessment maps used by all involved at all levels and in which issues of differences in Risk perception at village level have been addressed or are being specifically addressed under HFA 3 activities with definite time lines attached. To do so requires acceptance that Risk perception at village level has merits and that differences in perception more frequently arise out of differences with perspective of time and intensity of impact felt at individual and household scale. As an example: something that impacts your every day life (e.g. nursing a family member with HIV/AIDS, collecting water from a distance every day) will likely be perceived as a "worse" disaster than an annual drought or flood which one has come to expect. That the two are interrelated is appreciated but prioritization of intervention will need to be negotiated for fulsome participation and buy-in especially with respect to preparedness issues.
- 4. HFA 4 activities must build on HFA 2 and 3 activities. There needs to be overt assessment and prioritization of these different activities pertaining to at least district level in order for HFA 4 Activities to be detailed at village level as is required.

## Strengths

- Well developed strategy and policy platform with regard to the Environment but limited activity although such is planned through the NAPA but does not overtly include specific consider other DRR activities that are currently underway;
- 2. National scale programmes to promote Rural Development and Agricultural Productivity and good practice (ADP);
- 3. National scale programmes to promote good health through improved Nutrition, AIDS/HIV awareness inter alia;
- 4. There are a number of organizations that previously focused only on EW/Relief Aid that are now engaged in and have significant institutional capacity (e.g. WFP). These organizations are now adapting to changing need and becoming involved in Risk Reduction activities and training at community and national level (FAO, WHO, FEWSNET) and similarly organizations that previously focused on Food Aid (WFP) now also undertake HFA 4 activities;
- 5. Significant, but not strategically coordinated activity by different stakeholders; GoM and Outside Agencies in HFA 3 & 4 activities in the social, education and economic fields;
- 6. The start of, but as yet limited, training at community level in risk assessment, leadership and preparedness;

These strengths support the DoDMA to initiate planning, coordination, mapping and further design of a strategic medium term programme (3 - 10 years) in partnership with District structures and external agencies.

# 3.3.5 HFA – 5: Be Prepared and Ready to Act

The opportunities in DRM in Malawi are based on the existing Strategies, Plans, and Frameworks, and the unanimous agreement amongst key stakeholders that improvement is imperative in Emergency Management and in sustaining the desired outcomes of the numerous DRR interventions. Because the frequency of disasters resulting in extensive food shortages have been unremitting in Malawi since 2000 reaching intense levels in 2001/2002 and again in 2004/2005 the actual progress made in DM in Malawi since 1991 is easily overlooked.

As discussed under HFA 1 these are the introduction of legislation (1991), the initiation of the NMDP in 1995 culminating in a draft version (2004) now to be used as input into the proposed Disaster Risk

Management Policy and Disaster Risk Operations Guidelines/Manual. These documents will also be informed by the input from members of the National Platform to be established shortly with the support of the UNDP, Malawi office.

The case study presented in Box 3-11below illustrates the progress that has been realized in response to Food Shortages in the country. It also highlights the need for changes in the operation of the Joint Emergency Food Aid Programme (JEFAP) in the light of underlying issues of chronic food shortage and episodic pockets of extreme shortage that warrant response but are not large-scale crises. The JEFAP is spearheaded by the MoA&FS and is a coordination mechanism that grew out of the 2001-2005 famine(s) and extended food shortage episode.

#### Box 3-11 Success Factors identified in the Joint Emergency Food Aid Programme

#### Success Factors identified in the Joint Emergency Food Aid Programme

The major positive attribute that led to the success of JEFAP worth considering in future programmes was the high level of commitment and dedication from all stakeholders that were involved at various levels. Government Officials, NGOs and donors alike worked tirelessly to ensure success of the programme. Additionally, the declaration of the state of disaster by the President on 27<sup>th</sup> February 2002 and the appeal for assistance from the donor community was a clear testimony that the country was facing a "*Not ordinary problem*". This was evident in the first meeting organized by the Government to discuss the crisis. This meeting was chaired by the Vice President and attended by three Senior Government Ministers, Principal Secretaries and other senior government officials. These sets of events gave the relevant type of authority to those who were from then on supposed to carry out the subsequent tasks. Supportive teamwork that was developed through the JEFAP among various stakeholders was reported to be a major source of success (Phiri, 2004). A number of specific success factors were also identified and are summarized as follows:

- **Reliability of the funding base:** Notwithstanding the unavoidable delays in mobilization and flow of funds, the funding base was very reliable and this created considerable incentive and confidence among the stakeholders that the programme would not fail.
- **Commendable networking among the stakeholders:** NGOs had previously always worked as rivals or competitors. The working together and sharing of experiences through the Consortium resulted in NGOs reappraising their relations, and accepting each other as partners in development.
- **Regular Feedback at all levels:** The bi-monthly meetings that were held at the Food Security Technical Secretariat, WFP/NGO Consortium and District levels provided a quick feedback mechanism and quick joint decision making also avoiding duplication of efforts at the implementation level.
- **Common tools of operation but shared responsibilities:** Since everyone did the same thing using a common approach, it was very easy sharing experiences.
- Logistics: The flow of food items into the country involved a chain of operations from the ports of Beira, Nacala and Dar es Salaam into warehouses in Malawi. Temporary storage facilities were provided in the outlying areas where insufficient warehouse capacity existed. These warehouses were used to preposition stocks in anticipation of the rainy season.
- Strong and Shared Leadership: the Minister of Agriculture himself with minimal delegation chaired most of the meetings. This meant that quick decisions were made during each meeting rather than seeking further consultation in cases of delegated authority. At the lower operational levels, there were clear job descriptions and demarcation of roles and responsibilities. This resulted in limited overlap among players thereby ensuring efficient actions where needed.
- **Coordination:** The coordination was at two levels: a) The Technical Secretariat at the Ministry of Agriculture and Food Security, and b) WFP/NGO Consortium. The Technical Secretariat coordinated meetings and sharing of information at the policy level and the district operational level the WFP/NGO Consortium coordinated the implementation of the humanitarian response. Representation of WFP at the policy level meetings provided the necessary feedback to such meetings regarding how implementation was progressing at the district level.
- Food Distribution Managed by NGOs: Targeting of beneficiaries as well as distribution of relief items was carried out by NGOs thereby limiting politicizing the relief operations. There was very little political influence during JEFAP operations

The Malawi Vulnerability Assessment Committee (MVAC) formed between 2001 and 2005 supports the National Food Crisis Task Force (FCJTF) and the JEFAP in Early Warning. The MVAC warns of the onset of a complex disaster, *Famine*, whether it arises from drought or flood or a combination of both. Because of the limited Coping Capacity of the population and the chronic Vulnerability, Famine or near Famine is often triggered by hydro meteorological droughts and "Dry Spells" as well as floods. In 1999,

2001/2002 and 2005 Malawi experienced a significant Drought i.e. hydro meteorological resulting in widespread famine and hunger throughout Malawi. These events have resulted in the present legislation and responsive institutions and mechanisms. The combination of the MVAC and the JEFAP are in effect a specialized mechanism to respond to Food Shortages before they escalate into Famine. Having learnt from the 2001/02 Famine, the ADMARC and NFRA are aware and informed (See bibliography for detailed discussion).

The MVAC evaluates vulnerability at household level using data collected at the scale of Enumeration Areas (ea's) and summed across Livelihood Zones (using a composite measure of co-dependent variables of malnutrition (as observed at rural health clinics), food prices in the markets (observed by WFP, FEWSNET and select GoM Ministries), crop producti estimates (MoA&FS), Coping Capacity (measured by Income and Asset) as well as cross border sales of maize and other staple crops. This data is modeled using a Geographical Information System and customized software. Analytical, GIS and IT Skills within the MVAC support the regular use, upgrade and maintenance of the system. The MVAC functions as part of the regional SADC Committee and there is regular liaison and coordination between these members.

Routine collection of data is undertaken by the MoA&FS by Agricultural Extension Officers (Field Officers), is collated by an Extension Planning Area Coordinator (AEDC) and submitted to the District Agricultural Development Officer (DADO) for checking and field verification. It is then submitted through the DA to the Ministry Headquarters and so to the MVAC. This process takes between two and four weeks and the MCVAC bulletin is published within one month. A monthly bulletin reports the status of Food Security and Vulnerability to Malnutrition country wide, highlighting areas where a shortage is being experienced. The JEFAP does not respond to isolated incidents of Food Shortage and this has impacts on long-term reduction in Vulnerability of the population to Risk, as does the time line between data collection and issuance of the warning of food shortages. The time frame between this issuance and initiation of response is unknown. The DoDMA participates on both the MVAC and on the JEFAP spearheaded by the MoA&FS while the MVAC sits within the MEPD.

There are a number of areas that have improved in different Line Ministries and these relate specifically to Early Warning of Malnutrition and Food Shortages. The shift in emphasis and design of the FCJTF to the FNSJTF is an example of the shift from reactive Emergency Management to DM that is supported by the programmes has been initiated in the past few years (since 2003/2005) at a sub-regional and national level in addressing Food Security (See HFA – 3 & 4).

In summary, since 2001 and arising out of the lessons learned and mechanisms put in place, there is now a reliable Early Warning System in place for Famine. In addition, there are institutional arrangements and programmes at national and local level being implemented by the full spectrum of players from government through to local NGO and FBOs that address Vulnerability to Famine. The organizations are working towards increasing household and community Coping Capacity and Resilience, at least to small but frequent flood and drought events.

It is almost unthinkable to imagine how an early warning system for Famine, a complex, slow onset disaster could function routinely without the sophisticated spatial data handling and analytical capacity of the MVAC. Without it, as happened in the early stages of the 2001/2002 famine, the decision to declare a disaster and to obtain consensus amongst all role players, that there was indeed a disaster looming and that intervention was urgently required depended very much on the evidence of the disaster being indisputable. The ensuing delay meant that the impact and suffering of the population was already advanced. The situation in 2001/2002 was compounded by various institutional relationships and communication between different agencies with respect to management of Grain Reserves that resulted in further delays in Food Aid reaching recipients.

This situation has certainly improved and the reliability and credibility of the EW that the MVAC issues and the good reputation that it patently enjoys, is certainly due to this capacity and to the commitment, motivation and coordination of various role players participating in the MVAC and the JEFAP. This is because an Early Warning that is not effectively acted on will not gain any credibility. A singular contribution of the MVAC is that there is a quantitative, objective and transparent approach to the processing and evaluation of the data on which the Early Warning is based on and there are clear well established and agreed upon criteria which are based on measurable data that determine whether a warning is given or not. Furthermore, there is a graduated series of warnings that support a state of readiness in the event of an emergency.

A <u>challenge</u> is summarized as a factor that needs to be overcome but is not insurmountable without significant external support or input. There are four key challenges. These are:
- To extend this system of cooperation and coordination of resources the MVAC/JEFAP/Line Ministry demonstrate. Specific coordination at local levels such that the one (min) to two months (max) between data collection and issuance of the warning can be reduced and that response and relief planning and coordination can be delegated to "regional" (north, south, central) levels of government, if not to district, as capacity and resources allow.
- 2. To advocate at higher levels of government (parliament, cabinet, president) that the JEFAP and the FNSJTF (previously the JFCTF) and their associated structures remain active and in a state of readiness as this is a critical element of DM. There can be no proactive DM if there is no preparedness, readiness to act and well-rehearsed contingency plans in place. The subtle difference in the focus of the JFCTF and the FNSJTF must be highlighted. The latter is involved in HFA 3 and 4 activities. The purpose of the JFCTF was and would best remain in the HFA 5 arena and coordinate with the DoDMA on this basis, even if the members participate in both. These are two distinct operational approaches. This would ensure that what is gained in the new forward looking approach is not at the expense of Preparedness and Readiness in the event of a critical food shortage whether it is at national or local level. Reluctance to convene meetings to discuss pockets of food shortages in the country when there is as yet no threat at national level can be addressed through delegation of responsibility (with associated resources) to different levels of government. The scale or intensity of a disaster should not be a factor in the effectiveness of the response but should rather influence the nature of the response.
- 3. Because there is no well defined overtly measurable criteria for defining a disaster if it is not related to Vulnerability, as established by the MVAC, there can be confusion over whether to declare a disaster or not. The NDP reports an event in which two military personnel were killed in a vehicle accident as a disaster. However, it does not record the deaths that apparently arise from epidemics and are reported in other disaster databases. The reasons for this are unknown and warrant frank discussion in order to ensure that deaths related to epidemics are not a result of secondary and tertiary impacts of Droughts and Floods. Defined and agreed upon criteria for declaring a disaster that considers the socio-economic, geographical and environmental context of Malawi would support effective DM and long-term DRR.
- 4. The credibility of data collected through the DM structures (as per Figure 3.1; NDMP, 2005) has in the past been questioned (2001/2002; 2007/2008) thereby necessitating expensive verification exercises. The chain of command in Emergency Management that 1) manages the collection and flow of data, 2) interprets and presents the data/information and 3) is enabled to take decisions, should be relatively short, reliable and credible, and enjoy the professional and personal trust of key stakeholders. The chain of command shown in **Figure 3.1** is complex. Efficacy would depend on reliable capacity and resources, timely reaction, no issues of opportunistic political intervention, good communication and working relationships between all parties at all levels. Difficulties observed and reported by parties interviewed in this study relate to capacity, competence, resources, equipment (hardware and software) and logistics at least at district level. It also relates to the apparently limited training, development, testing and exercise of preparedness and contingency plans, even of those in place in some districts, limited coordinated approach for effective response from village to District level and in some instances District to National level.
- 5. The cultural complexity, role of women and need for their active involvement in DM and DRR activities and what issues inform resistance to change at village level is recognized and is being more widely appreciated. There is evidence in the DoDMA and NGO interventions that the aspirations of villagers are being considered in the design and implementation of programmes and soliciting this information was explicitly stated in a number of interviews as being a part of the Inception phase of all projects. There is less evidence of villagers being actively involved in relief and recovery initiatives, which can also be an important opportunity for skills transfer and building self-reliance. In similar situations, this has been shown to be critical to the rate at which communities recover and regain coping capacity (see Bibliography).

While EW & DM can and do benefit from technology and ITC, it does not depend on it especially in the case of rapid onset disasters (see Box 3-9 in section HFA 2 above). Preparedness (heeding EW and knowing what to do) at local level at the onset of a disaster can be is a key element to minimizing impacts and therefore the success of DM.

The key characteristics of a good and effective emergency management capacity (DM) relate primarily to soft issues, preparedness of the local community in the area of impact and all parties knowing what the appropriate protocols are and ensuring that they are followed. Further key characteristics include

leadership skills at different levels where decision-making, logistic backup and coordination of different players is required. The necessary skills and disciplines must be in place to ensure quality data collection, processing of data and information and routine.

Once a rapid onset disaster has impacted there should be as short a time as possible before Relief Interventions are on site. In the event of a slow onset disaster the DM efforts need to be coordinated with HFA 3 & 4 initiatives on an ongoing basis with very clear criteria established on an area specific, and if need be village specific, basis to trigger Emergency Response activities. This is not yet in place. As the resilience of a community improves, it may be expected that the criteria could be adjusted accordingly and that the trigger point will be reached less often. In an extremely vulnerable population it should be considered whether it is necessary that the criteria reach levels that qualify as a disaster before there is intervention. This approach could be factored into HFA 4 activities and therefore fall outside the scope of DM.

Some details of the Constraints faced by the DoDMA and GoM are given below fully recognizing the odds that the GoM faces and the uncommonly complex nature of the disasters with respect to Hazard, Vulnerability, and the challenge to sustain an increase in Coping Capacity and develop EWS and DM capacity at local level.

The goal of HFA 5 is for the DoDMA and partners to effectively respond to disasters anywhere in Malawi in the shortest possible time and for the frequency and scale of impact of such disasters to decrease through sustained improvement in community resilience and preparedness. The recommendations in Section 4 are based primarily on the successful progress in DM since 2001 and the constraints listed below that are perceived to be inhibiting realization of this goal at the present time.

<u>Constraints</u> are considered to be issues requiring urgent and immediate attention if there is to be a change in the status quo. The constraints that relate to the overall funding of the DoDMA have been addressed under the HFA 1, being of an institutional nature. The financial constrains bulleted below relate specifically to DM. These are:

#### **Constraints**

- 1. Considering the urgent need throughout Malawi for the majority of communities and households to move above the poverty datum line, it is necessary to consider area specific definitions of disaster. The definitions should take into account the coping capacities of the population, the environmental, social, economic and infrastructure constraints that they face in rebuilding coping capacity destroyed by the disaster. This would mean factoring in a composite measure of what comprises a Disaster and define appropriate Response process that includes a time line for duration of Relief and Recovery Interventions with defined criteria for withdrawal. These need to be coordinated with HFA 4 and HFA 3 activities underway or initiated during recovery process as a very specific Disaster Mitigation measure.
- 2. The key issue of <u>Capacity and Resource</u> has distinct elements: These are:
  - Delays in securing funds requested from the Unforeseen Expenditure Vote (UEV) impact on timely delivery of relief and are considered to inhibit proactive planning and coordination of alternative funds;
  - b. Only the DoDMA can access funds from the UEV. The Roads Funds administration has a budget line item for Disaster Response. Other departments use or reserve part of O&M budget and rely on topping up from after disaster budget re-allocations. But the UEV budget is not reported in annual budget statements making it difficult to find information on how it was used which in turn leads to lack of confidence/reluctance in parliament to support the UEV. Good financial control and accountability is needed to secure access to UEV from Treasury. This cannot be relied upon if the DoDMA resources are stretched too thin, inexperienced or do not have the necessary protocols in place to support this. This suggests that there is a need for high-level advocacy in parliament and possibly cabinet in DRM and the cumulative impact on the country.
  - c. The DoDMA relies on decentralized structures for disaster management, which are not yet functioning properly and to whom financial resources have not yet been delegated throughout Malawi. DM responsibilities are added to the Job Description of existing officers (at present mostly of them Administrative Clerks) in addition to other routine duties. There is no funding at district level for DRM or DM specifically. The job of collecting, collating, verifying data for purposes of evaluating the impact

of a disaster and coordinating relief and recovery efforts is given to an existing officer (e.g. Administrative Clerk or Planning Officer) in the DA in addition to his usual duties. There is no additional budget for undertaking these duties and there is no specific training provided. Furthermore, there are invariably severe financial constraints for monthly running costs experienced in some districts. A lack of/maintenance of ITC facilities to support timely communication, and limited to no automatic spatial data processing technology nor ready current and up to date database inhibit planning of DM or DRR. There is a risk that in delegating the DM functions but not the budget or the additional capacity, districts, especially the disaster prone, need to become self-funding by raising local taxes beyond what is bearable in communities that are already impoverished.

- d. There is apparently not an established readily accessible and accurate, up to date spatial and relational database in the DoDMA containing relevant and accurate information such as access, resources (human and other), local agencies and authorities, local supplies available for relief distribution, budgets/activities of different stakeholders (GoM and civil) and available financial and human resources in the event of emergency
- 3. The DoDMA staff does not have the necessary technology (GIS and at the least a relational database) and skill to efficiently and effectively collate and verify data on the impact of a hazardous event received from various parties and different areas. However, there are resources (MDF, MoA&FS, MoPH, MVAC) that can support the DoDMA in this process once roles and responsibilities and protocols to support exchange of data and information in routine and exceptional circumstances are agreed upon.

In summary, given the thorough consultation process implicit in the DoDMA organogram there is a high possibility of additional costs and delays between notice of a disaster and action if these plans are not in place and a matter of routine "Step to It" when the need arises. In an emergency the time to talk or debate is past. There is a clear need to initiate a process of anticipatory action rather than debate. This is not to say that funds are allocated or spent unnecessarily, rather that a state of readiness is realized and that different role players know what they are required to do and are practiced in it prior to an actual disaster being declared. A strong culture of consensus requires to be balanced by permission and authority to act decisively.

### Strengths & Opportunities

Given the scarce resources available to the GoM it important to optimize skill and resource and not to duplicate investment or effort but to upgrade coordination and cooperation to build on whatever already is in place in the different Line Ministries.

- 1. DRR and DM is implicitly mainstreamed in the routine activities of the MoA&FS and the MoH&P, through long standing practice as well as specific programmes that are underway. This is a clear strength in the GoM system that the DoDMA can build. This was evident during the response to food shortages between 2001 and 2005 led by the M0A&FS. The MOH and the MoA&FS have contingency plans in place at district level for outbreaks of Cholera and food shortages respectively. The control of cholera is reported to be successful in the Salima district where no cholera outbreak has been reported for the past ten years. However the patterns of death ascribed to epidemics in international disaster databases suggests that this may not be the case throughout Malawi and that secondary and tertiary impacts of disasters are not being considered. The MOH also maintains medical supplies, although the Salima district reports a chronic shortage and nominal spare capacity to assist outside of routine activities;
- 2. The Malawi Defense Forces have significant experience and training in Emergency Management. It has skilled & disciplined "staff", experience in erecting temporary shelters/camps, bridges, access roads, and medical support units. In addition, it has medical & food stores that can be replaced in due course, warehouse infrastructure in the southern central and northern regions of the country, communication technology and expertise, logistic and transport knowledge, capacity and experience in management of stores and transport (trucks for moving supplies, helicopters for evacuation and rapid assessment). The MDF has established bases in center, southern and close to northern Malawi. They have warehouse and store management capability at these places. The distinct geographic, geologic and climatic differences between the north, south, central and lakeshore districts with consequent social and economic vulnerabilities. Consideration could be given to building on the existing MDFs

facilities to facilitate timely response and distribution of supplies. The MDFs maintains medical supplies that can at short notice be drawn on to be replaced at a later date once the emergency relief and response phase is over;

- 3. Similarly, the MVAC is an effective and efficient unit housed with the MEPD that already coordinates numerous actors, receives data from various members, and has developed the necessary database and modeling capacity to interpret the incoming data and to issue warnings in the event of slow onset disasters such as hydro meteorological drought (hazard) and potential famine (Disaster). It is a credible and respected unit but the processes and protocols, which are its strength, are not designed to be an impact assessment unit for rapid onset disasters that can arise from flooding with variable impacts but usually loss of home, crops, infrastructure and also possibly death.
- 4. Flood prone districts (Nsanje, Chikwawa, Mangochi, Salima, Phalombe, Machinga and Karonga) have prepared Flood Contingency Plans between 2002 and 2004. Similarly, Disaster Risk Management Plans have been developed for Dedza, Ntcheu and Balaka and were supported in this by Concern Universal, an international NGO. This is a first step in developing a Hazard specific preparedness and Readiness mindset. The quality of these plans is not standardized. The plan for Chikwawa is a good example of a contingency plan as roles and responsibilities are well defined and assigned to specific posts. Such plans need to be expanded to include other hazards and to cater for slow onset disasters and initiate intervention prior to critical levels of vulnerability being evident. The plans can include a Preparedness & Response component at village level.

The recommendations in Section 4 focus on the overarching Strategic Goals of the HFA needed to upgrade DM in Malawi as well as those selected operational elements, Hazard Identification & Risk Assessment and Early Warning that specifically require capacity and resources for relevant ITC, Data and Information & Knowledge Management identified in the SA above as being possibly constraints i.e. impeding progress. The cross cutting element of Gender is not considered in any detail but it is suggested that it is given serious consideration in the design of any interventions or disaster response in the future.

This approach can be debated and revised during the forthcoming workshop. However succinct the recommendations, there will be an element of repetition. Cross-referencing between HFA priority areas and generic references are unavoidable because the desired outcome of DRM is a result of numerous integrated and interrelated activities that cannot be considered in isolation.

#### Box 3-12 Emergency Management and Early Warning Systems

#### **Emergency Management and Early Warning Systems**

Good Emergency Management and Early Warning Systems do benefit from technology but are not dependent on it. The primary elements of an Effective Emergency management (USA Federal Emergency Management Agency, 2008) are soft issues that technology can facilitate but not replace e.g. communication, mapping and analysis of data, access to and distribution of information.

The best most sophisticated technology, the best information will not result in effective DRR. Effective DRR requires a particular attitude and certain attributes in persons leading the initiative at all levels of government.

Planning, preparedness and execution capacity needs to be built at local level alongside an acceptance at national level that DRR will be effective when the communities potentially impacted by disasters are themselves involved in anticipating the disaster. It further supposes that they support land use and environmental practices that reduce the risk of a disaster happening, or reduce the potential impact (i.e. are disaster resistant), and are disaster resilient, having good coping capacities at community, household and individual level.

Disaster resilience implies the ability to coordinate, cooperate, know what to do when in response to warning, have economic buffers to bridge hard times, have strong social/family bonds, and a sense of responsibility for the weak, elderly and vulnerable.

## 4 Conclusion and Recommendations on Key Policy and Strategic Issues in DRM

"Development does not start with goods; it starts with people and their education, organisation and discipline." E. Schumacher, 1973.

The Malawian Government is responsible for building an enabling environment in which the stakeholders can effectively contribute their financial resources and skills to DRM. The development and launch of a National Platform to implement the HFA will greatly contribute to realizing such an environment.

There have been a greater number of disasters in the last five years but these have not had a greater cumulative impact than those reported for the 1898-2003 period. This is in some measure due to the positive impact of the coordinated response in 2001/2002, albeit delayed, and the effective response to the severe food shortages during 2004/2005. That this response was possible (and that the cumulative impacts of the disasters were not as great or greater than the 15-year period before that) is in some measure due to the experience gained and steady progress made in disaster management that built on the hard lessons learned in the 2001/2002 event. However, the social and economic resilience of the population has significantly decreased and is reflected in declining attendance at school, increased poverty, malnutrition and single-headed households.

As the frequency of disasters, the population number and the pressure on the environment has increased, the environmental, social and economic resilience has declined at community level. Disasters are being declared more frequently because lesser hazards are having unacceptably high levels of impact on communities, for reasons pertaining to changing weather patterns, increased environmental degradation, failure of subsistence farmers to adapt land use and modernize agricultural practice, inter alia. For example, a drought may become disastrous if there is no access to stored water and there is a dry spell during a particular phase of the growing cycle. Such so-called man-made disasters result from reduced coping capacity (e.g., poor income and low asset base) and increased vulnerability of the population (e.g., poor health, limited land, soil infertility, lack of labor, inter alia). It is therefore increasingly necessary to focus on the medium- to long-term goal of promoting awareness and initiating education programmes (HFA 3) pertaining to the risks that a community faces; and increasing resilience to these risks at village level (HFA 4).

Promoting awareness of the risks, and the important distinction between hazard and risk, supports and motivates a community to develop the skills set among the population and supports preparedness in the event of a slow- or a rapid-onset disaster. Drought is a hazard, not a disaster per se, and the risk of a drought becoming a disaster is a function of the vulnerability and coping capacity of the communities, taking cognizance of the impact of environmental degradation on community resilience and their coping capacity in the medium to longer term. For example, if agricultural practice does not change, (contour ploughing, building of terraces on hill slopes) and erosion persists along with an increase in population, the coping capacity of a community will surely decline.

It is recommended that strategy and policy focus on increasing the funds invested in DRR (HFA 3 and HFA 4) at community, village and household level and Preparedness or Community Disaster Management (HFA 5) relative to that spent on relief aid. This will require a bottom up approach, *implemented through existing line ministries*, in partnership with the donor, NGO and FBO community complementing initiatives that are already in place. Any gains made in this arena must be underpinned and insured through sound and effective leadership, management and administration of Disaster or Emergency Management (HFA 5), without which any gains could be lost. Preparedness at community level is the best approach to minimizing the impact of disasters. Time lost prior to relief and recovery interventions exacerbates the impact of a disaster. Thus investment and delegation of DM duties to District Level should be prioritized with appropriate funds and capacity.

The role of the DoDMA is therefore seen as specialist facilitation and coordination and as a lead agent in DM whilst initiating activities for key stakeholders to implement in DRR. It should seek to optimize existing resources and facilitate access to resources (skills, knowledge and funding) through advocacy and liaison at national, regional and international level. It should be independently and securely funded and, have a high profile with Parliament, media and GoM. In addition, it must be able to attract the top

local graduates who will have a career path to ensure succession at national, district and local levels. It is recommended to support the development of a culture of research and innovation, independent thinking and proactivity, with sensitivity to cultural diversity and the complexity of social memory and drivers. Effective, leadership of the DoDMA requires particular qualities of leadership, management, advocacy and negotiation at all levels.

The focus of the DoDMA must therefore remain on further developing and ensuring the effective and timely response to disasters (HFA 5) while improving in depth understanding of DRR elements. It should strive to contain the impact of the disasters; and to optimize the opportunities for recovery and rebuilding to a level where assets are available and HFA 3/HFA 4 interventions are increasing these rather than, at best, replacing those previously lost in small disasters (Devereux, 2001). Given scarce resources, it is therefore important that investment be in timely response and mitigation measures to reduce the greater risks.

The following summarizes the priority areas of action arising from the Situation Analysis and suggests possible roles, responsibilities and approaches that build existing capacities and strengths. These are based on lessons learned during the 2001/2003 food crisis (e.g. JEFAP) and more recent events that illustrate that the key element of a successful and effective disaster response is the political will that provides the necessary momentum and commitment at all levels:

- To mobilize resources and distribute funds to where they are best utilized;
- To agree upon and define a common approach or modus operandi; and
- To clarify roles and responsibilities to limit antagonism, promote coordination, enhance efficiency and limit the time required for conflict resolution.

Based on these parameters or building blocks of success, and the need to move towards meeting the three strategic goals of the HFA, the following primary goal is suggested:

Progress and improvement in current DM practice in Malawi (through coordination and cooperation with the line ministries, external agencies, local NGOs and other agencies and the MDF) on a regional basis in all DM functions, ensuring that DRR practices are initiated in all DM related activities ((HFA Strategic Goals 3).

It is critical that a DRM database be appropriately designed and developed. The implementation of the design can be incremental but the design must cater for both recording relevant Hazard, Vulnerability, Coping Ccapacity information as well as Disaster Management related data. The items underlined and highlighted in italics are those considered to be absolutely essential starting steps to moving forward and *will require an appropriate DRM geospatial database be designed and developed in parallel.* These items are bedded within an overall plan contributing to the development of a national platform that will be necessary to support the DRM in Malawi. To realize this, the following is suggested.

- a. Finance, resource and equip the DoDMA at least to the level recommended in the NDMP, 2004 or as per recommendations of Benson and Mangani (2008);
- b. <u>Undertake a scientific Hazard Identification and Risk Assessment at a national scale and at a local scale in the districts most prone to flooding and drought and vulnerable to landslides and <u>earthquakes.</u> This refers to complex disasters and the role of environmental degradation in escalation or precipitation of risk; and including the low-frequency, high-impact hazards such as major earthquakes and health-related secondary and tertiary impacts arising from floods and droughts. This is considered base line planning information for all DRR related interventions and will require inter alia:</u>
  - i. Studies at a national scale and in selected areas using remote sensing and geoinformatics to evaluate complex environmental, earth and riverine processes related to:
    - 1. <u>Vulnerability to Drought and or Flood because of environmental factors correlated</u> with socio-economic factors (i.e develop a composite indicator)
    - 2. <u>Undertake a gender and age sensitive analysis of vulnerability and coping</u> <u>capacities in context of identified physical, social, economic and cultural risk</u> <u>factors.</u>
    - 3. <u>Vulnerability to landslides aggravated by neotectonic faulting and poor land use</u> <u>and environmental practices:</u>
    - 4. <u>Detail the composite earth, climate, environmental and socio-economic factors</u> <u>that influence Flooding (especially in the Lower Shire);</u>

- c. Undertake, at least in those districts most vulnerable to floods and droughts, Participatory Vulnerability Assessment (PVA) and Participatory Risk Appraisals (PRA) at village community level by expanding on the "Train the Trainer" approach already being implemented by a number of NGOs and FBOs;
- d. Prepare for appropriate delegation, to at least regional (north, south, central) or district level of responsibility, with appropriate funding of selected DM (HFA 5) roles particularly those associated with immediate response and relief to:
  - ii. Establish a DoDMA representative at district level who is solely responsible for liaison as required. Coordination of local response to a disaster; interfacing with other districts, regions and nationally if required; develop and maintain a local DRM data base; initial collation and processing of Impact Assessment data for submission to national level; verification as required; liaison with DA line ministries and external agencies as required, inter alia.
  - iii. Build capacity of the Civil Protection Committees at all levels and with other agencies responsible for:
    - 1. Collection of impact assessment data, monitoring and evaluation of DRM projects and feedback on DM activities by local, national or international agencies;
    - 2. Immediate relief activities in event of a disaster;
    - 3. Advocacy and education outreach to promote participation in programmes run by line ministries and other players.
    - 4. Observation, reporting and dissemination of readily observable EW signs or dissemination of EW received at district or national level; and
    - 5. Monitoring and evaluating the progress and sustainable outcome of any HFA 3 and HFA 4 programmes in their area;
- e. Coordination and cooperation between the DoDMA, line ministries and external agencies in the medium to long term, given the imperatives of improving resilience at community and village level (*HFA Strategic Goals 1,2*).
  - iv. Preparedness for and local response to disaster through awareness, education (HFA 3 & 5);
  - v. Resilience to disaster through improved environmental practice, health, income/asset base (HFA 4);

Doing so requires that line ministries and the DoDMA (through the proposed process of developing the Disaster Risk Management Policy and Disaster Operations Guidelines/Manual) ensure institutions rationalize, optimize and proactively use the existing legislation, strategies, policies and institutional mechanisms, resources and capacities to mainstream DRM measures into their development programmes (e.g. the ADP; Nutrition). Emergency response programmes (e.g. cholera) and disaster recovery programmes to purposefully build knowledge, understanding, resilience and preparedness at community level should also be included in all sectoral planning with appropriate budget line items.

Aside from the strategic considerations above, specific short-term suggestions are made in order to promote and develop the political will and the data and knowledge bases needed for the above. These are that the DoDMA:

- a. Undertake targeted high level advocacy for DRM (parliamentarians, media) i.e. high level advocacy at three levels of government, as well as at donor level and promote use of the media for advocacy and education and dissemination of early warning:
  - vi. Government level to influence and contribute to policy development at national level and raise awareness amongst parliamentarians so that a comprehensive DRR and DM policy is developed;
  - vii. Community level to ensure that communities share best practices; and
  - viii. Donor level to support release of funds for addressing the underlying causes of disasters and to maintain projects over the time needed to secure sustained community-motivated behavioral change.

- b. Prepare a 5-10 year programme for DRM in Malawi to establish a best practice framework. This is undertaken with a view to creating a central fund for external support and/or establishing a strategic alliance and networking with other stakeholders in DRR and climate change and adaptation to ensure funds are not diluted through competition.
- c. <u>Prepare a comprehensive mapping of current stakeholders, roles and activities cross-</u> referenced to risk assessment and geographic area as a base line planning data base to <u>support coordination and cooperation between line ministries and external agencies;</u>
- d. Identify top-level graduates to enter the field and offer structured career paths, planned and monitored mentorship, regular exposure and exchange with professionals in this field.
- e. Select impact indicators used to monitor and evaluate progress in the HFA Monitor. The online tool developed by UN ISDR to support national platforms should be considered to support the MEPD monitoring for evaluation of progress towards the MDGs and the NAPA.

#### In conclusion:

Effective mainstreaming of DRM interventions into development and education programmes warrants a clear understanding and assessment of the risks and of what is required to mitigate them or to be prepared in the event of a disaster.

There can be a surprising difference between actual risk and risk perception. Participatory Vulnerability Assessment (PVA) and Participatory Risk Appraisals (PRA) are undertaken at least at community level, preferably village level. The latter supports the inclusion of indigenous and local knowledge. At national and district level a formal scientific risk assessment process is required but on a different geographic scale. It is important that the results of all risk assessments are given equal value and considered in designing mitigation, preparedness and response interventions. Where necessary, awareness and education outreach programmes are needed to support the process to ensure that common purpose and investment are realized.

It is also important that <u>all</u> the risks faced by a community are understood. This must include that the factors that cause a hazard to become a disaster are understood and that the appropriate response to early warnings (whether given through direct observation of changes in the environment or through the media, etc) is known throughout the community. This would include individual, household and community level or at the very least by the heads of houses, women or others who care for children, the weak and the elderly, village heads and community and district level leaders i.e. those who are in the area of impact. If this is not undertaken, the community can be at greater risk if it has the perception that all risks are addressed. The recommended approach is <u>CHARM</u> or Comprehensive Hazard and Risk Management. It cannot only be based on a historical memory perception of risk that is too easily conflated with the memory of the impact of the disaster without fully understanding the complex earth, environmental and social causes that contributed to the disaster.

Successful DRM requires ALL areas of PRIORITY ACTION to be implemented for each hazard faced at national, district and community level. If this is not undertaken, the administrative level above will probably carry a greater burden; and the social level below, a greater cost. DRM is empowered decentralization, but <u>if</u> it further reduces the coping capacities of the community and at the same time raises the bar as to what is expected of them, it will increase vulnerability. Coping capacities can be reduced by additional taxation/levies at district level; poor governance, lack of administrative, managerial or necessary technical skills; inadequate staffing; budget, inter alia. Decentralization without empowerment and good governance cannot be effective. It has been written that there is a risk of "local tax revenue imposing punitive burdens on monetized activity in rural areas, almost wholly utilized on sitting allowances for councilors and other functionaries rather than providing locally specific services to rural citizens" (Ellis, F., Kutungule, M., Nyasulu, A., 2002).

While Malawi undoubtedly has very limited resources, it must also be stated that improved use and coordination of available resources and sharing of information in a readily usable format would greatly facilitate reaching agreement and sustaining effective action. This together with overt measure of the impact of disasters on economic growth and development would build credibility with key stakeholders and increase timely access to resources and distribution of immediate and medium term relief measures at community level. Monitoring and evaluation of social, environmental and other DRR-relevant programmes and projects at community level is necessary to ensure that desired outcomes are realized.

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